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2.3.5 MAMMALIAN PREDATORS

2.3.5.1 Introduction - No changes have been implemented since Progress Report-4. See Section 2.3.5.1 in Progress Report-4 for the objectives of the mammalian predator studies.

2.3.5.2 Methods - No changes have been implemented since Progress Report-4. See Section 2.3.5.2 in Progress Report-4 for the methods used in mammalian predator studies.

2.3.5.3 Results - The mammalian predator scent-station survey was initiated on October 19 and continued through October 23, 1975. The siren-elicited howling response method as a coyote survey technique was employed concurrently with the scent-station method. The siren survey was conducted on only one of two scheduled nights (October 19, 1975) because of unfavorable weather conditons and the onset of mule deer hunting season.

The results of the scent-station survey and the corresponding relative abundance indices are summarized in Table 2.3-185. Siren-eleicited howling response results are summarixed in Table 2.3-186.

2.3.5.3.1 Scent-station Visitation Techniques - Results of the scent-station visitation techniques indicate that the coyote (Canis latrans) and the weasel (Mustile franata or M. erminea) are the most abundant mammalian predators in the Tract C-a area. They are the only predators that have responded to this survey technique.

Table 2.3-185 Scent-station visitation technique results and relative abundance indices as calculated from data collected during October, 1975 for RBOSP

	Operable Station Nights	Coyote Index	No. of Visits	Weasel Index	No. of Visits
Line A	189	37	7	27	5
Line B	193	47	9	26	5

Table 2.3-186 Coyote siren census results and station and group response indices calculated from data collected October, 1975 for RBOSP

Number of Stations	Number of Responding Station	Number of Responsing Groups	Station Response Index*	Group Response Index**
10	4	4	40	40

* Station Response Index = $\frac{\text{Total number of stations with response}}{\text{Total number of stations}}$

** Group Response Index = $\frac{\text{Total number of groups responding}}{\text{Total number of stations}}$

Response during October, 1975 was moderate for both sampling lines with indices of 37 and 47 for coyotes and 27 and 26 for weasels.

2.3.5.3.2 Coyote Siren Census - The station response index of the October siren-elicited howling response survey was 40. The group response index of 40 for the October, 1975, sample may have been low because of the limited sample size durig that period. Snow and snow packed conditions prohibited complete sampling during October, 1975.

2.3.5.3.3 Other Large Predator Investigations - Field observations and records of mammalian predators sighted during large mammal and raptor aerial censuses are being compiled. Distribution maps summarizing these data will be presented in the final report.

Efforts to locate past records of abundance and distribution of mammalian predatprs, records of damage claims to livestock, hunting kill, and trapping records of predaceous mammals specific to the area have thus far been unsuccessful. Many individuals from federal and state agencies have been contacted in an attempt to acquire this information, but it appears at this point at least, that such records are either poorly kept, misplaced, or simply non-existant. However, further efforts will hopefully yield some information.

2.3.5.3.4 Small Predators - The qualitative Havahart live-trapping program did not capture any small predator species during October, 1975.

2.3.5.4 Summary and Conclusions - Records of tracks, scats, and other definitive signs recorded by ECI personnel on and near Tract C-a, as well as the results of the scent-station visitation survey, indicate

that the coyote (Canis latrans) the long-tailed weasel (Mustela frenata), and the short-tailed weasel (M. erminea) were the most abundant mammalian predators in Tract C-a during the October census.

2.3.5.5

RAW DATA FOR MAMMALIAN PREDATORS

2.3.6 WINTER TRACK COUNTS

No data were collected for this program during the reporting quarter.

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET 83.C.7.1.2 (ECI) ecology consultants, Inc

Location RIO BLANCO A Proj. No. 83 Date 19 oct 75 Day # 1

Investigator BAKER Survey Route (A) on map

Weather clear

RDM 1930/75

1	—	26	mice
2	—	27	—
3	mouse	28	chipmunk
(4)	weasel	29	—
5	rabbit & mice	30	mice
6	—	31	—
7	mice	~~32~~	cows
8	mice	33	—
9	mice	(34)	coyote
10	mice	35	—
11	mice	36	—
12	mice	37	—
13	—	38	rodents
14	—	39	—
15	mice	40	rodents
16	rabbit & mice	41	—
(17)	weasel	42	rodents
18	mice	43	—
19	mice	44	rodents
(20)	coyote	45	—
21	mice	46	—
22	mice	47	—
23	—	(48)	coyote
24	—	49	—
25	mice	50	—

83.C.7.1.2

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ECI ecology consultants, Inc

Location Rio Blanco (B) Proj. No. 83 Date 19 OCT 75 Day # 1

Investigator Sanz Survey Route B- on map (RSOW)

Weather clear, seasonal temp

rem 10/30/75

1	mouse	26	chipmunk, mouse
2	ground squirrel, mouse	27	~
3	~	~~28~~	inop. (horses)
4	chipmunk, beetle	29	mouse
5	~	30	~
6	~	31	~
7	~	(32)	weasel
8	~	33	bird
9	cottontail, mouse	(34)	coyote
10	~	35	~
11	~	36	chipmunk, bird, mouse
(12)	coyote	37	chipmunk, bird
13	~	38	~
14	~	39	~
15	~	40	mouse
16	~	(41)	coyote, beetle
17	~	42	~
18	cottontail, chipmunk, mouse	43	~
19	~	44	~
20	~	45	bird
21	~	46	~
22	cottontail	47	~
23	~	48	~
24	chipmunk, mouse	49	~
25	~	50	~

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET 83.C.7.1.2

ecology consultants, Inc.

Location Rio Blanco A Proj. No. 83 Date 20 OCT 75 Day # 2

Investigator J. BAKER Survey Route A see map

Weather clear

from 10/30/75.

1		26	
X 2	wind blown	27	rabbit
3		(28)	coyote
4		29	
5		30	rodents
6		31	
(7)	coyote	32	rodents
8	mice	33	rabbit
9	mice	34	
10		35	chipmunk
X 11	cows	36	
12	rabbit	37	
13		38	rabbit
14		39	
15	rodents	40	rodents
16	rodents & chipmunks	41	chipmunk
17		42	rodents
18	rabbit	43	rabbit
19	rodents	44	mice
20		(45)	coyote
21	chipmunk	46	mice
22	chipmunk	47	
23		48	
24	rodents	49	mice
25		50	

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

83.C.7.1.2.

ECI ecology consultants, Inc.

Location Rio blanco B Proj. No. 83 Date 20 OCT 75 Day # 2

Investigator Sanz Survey Route B (on map

Weather clear

TOM 10/30/75

1	chipmunk	26	—
2	chipmunk	27	—
3	bird	28	—
4	chipmunk	29	mouse
5	mouse	30	—
(6)	weasel	31	—
(7)	weasel	32	—
8	—	33	chipmunk
9	chipmunk	34	—
10	—	(35)	coyote (took capsule)
11	cottontail	36	ground squirrel
12	—	37	—
13	chipmunk	38	—
(14)	coyote	39	—
15	—	~~40~~	horses
16	—	41	—
17	—	42	mouse
18	cottontail, mouse	43	—
19	—	44	deer
20	chipmunk	45	mouse
21	chipmunk	46	—
22	chipmunk	47	—
23	ground squirrel	48	—
24	—	49	rabbit (large)
25	—	50	rabbit (large)

83.C7.1.2

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ecology consultants, inc.

Location Rio Blanco Proj. No. 83 Date 21 OCT 75 Day # 3

Investigator J. BARRETT Survey Route (A) Occ mtn

Weather clear

RDM 10/30/75.

1	—	X	located at hunting camp where there is a dog
2	~	27	—
3	—	(28)	weasel
4	—	29	—
5	—	30	—
6	—	31	—
7	—	32	—
8	—	33	—
9	—	34	—
10	—	35	—
11	—	36	—
12	—	37	—
13	—	38	—
14	—	39	—
15	—	40	—
16	—	41	—
17	—	42	—
18	—	43	—
19	—	44	—
20	—	45	—
21	—	46	cow
22	—	47	—
(23)	weasel	48	—
24	—	49	—
25	—	50	—

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET 19 83.C.7.1.2

ecology consultants, Inc.

Location RIO BLANCO B Proj. No. 83 Date 21 OCT 75 Day # 3

Investigator SANZ Survey Route B -on map

Weather clear

DBM 10/30/75.

1	ground squirrel	26	deer
2	—	27	chipmunk
3	—	28	—
4	chipmunk	29	mice
5	mouse	30	horse
6	mouse	31	—
(7)	weasel	32	—
8	—	33	deer
9	chipmunk	34	—
10	—	35	mouse
11	chipmunk	36	horse
(12)	coyote	37	—
13	—	38	mouse
14	—	39	—
15	bird	40	—
16	—	~~41~~	horses
17	—	42	—
18	rabbit	43	—
19	ground squirrel	44	—
20	—	45	deer
21	ground squirrel	46	—
22	—	47	—
23	—	~~48~~	cattle
24	—	49	—
25	—	50	rabbit

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET 83.C.7.1.2

ecology consultants, inc.

Location Rio Blanco Proj. No. 83 Date 22 Oct Day # 4

Investigator J. BAKER Survey Route A See map

Weather clear, windy

ROM 10/30/175

X	wind	X	dog in vicinity
2		27	
3		(28)	coyote
X	wind	29	
5		30	
6		31	
7		X	wind blown
8		X	wind blown
9		34	
10		35	
11		36	
12		X	wind blown
13		38	
14		39	
X 15	wind	40	
16		41	
(17)	weak	42	
18		43	
19		44	
20		45	
21		X	wind blown
22		47	
23		48	
24		49	
25		50	

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

83.C.7.1.2

ECI ecology consultants, Inc

Location RIO BLANCO (B) Proj. No. 83 Date 22 OCT 75 Day # 4

Investigator SANZ Survey Route B (on map)

Weather clear, windy

RDM 10/30/75

1	—	26	—
2	—	27	—
3	—	28	—
4	—	(29)	weasel
X	windblown	30	—
6	—	X	windblown
7	—	32	—
8	—	33	—
9	—	34	—
10	—	35	—
11	—	36	—
12	—	(37)	coyote
(13)	Coyote	38	—
14	—	39	—
15	—	40	—
16	—	41	sage grouse
X	hunter's camp w/ dog	42	—
18	—	43	—
19	—	44	—
20	—	45	—
21	—	46	—
22	—	47	—
23	—	48	—
24	—	(49)	coyote
25	—	50	—

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET 83.C.7.1.2

ecology consultants, inc.

Location RIO BLANCO Proj. No. 83 Date 23 OCT / 75 Day # 5

Investigator J BAKER Survey Route A see map

Weather snowing. snowpacked

RBM 10/30/75.

X	all stations were	26	
2	inoperable due	27	
3	to heavy snow	28	
4	accumulation	29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

B.C.7.1.2

PREDATOR SCENT-STATION VISITATION FIELD DATA SHEET

ecology consultants, inc.

Location Rio Blanco (B) Proj. No. 83 Date 23 oct 75 Day # 5

Investigator Sanz Survey Route on map - B

Weather snowing, snowpacked

RDM 10/30/75

X	all stations were	26	
2	inoperable due	27	
3	to heavy snow	28	
4	accumulation	29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

SIREN-ELICITED HOWLING RESPONSE

cation RIO BLANCO Project No. 83 Date 19 OCT 75 Investigators SANZ, BAKER

rvey Route 30 mi, on map Weather clear → light overcast
RDM 10/30/75 full moon

Station Number	Time	Response to First Sounding		Response to Second Sounding		Total Response		Notes on conditions affecting data; wind; proximity to humans, etc.
		Groups	Individual	Groups	Individual	Groups	Individual	
1	2050	—	—	—	—	—	—	
2	2120	—	—	1	?	1	?	great-horned owl
3	2143	—	—	—	—	—	—	
4	2212	—	—	1	?	1	?	
5	2240	—	—	—	—	—	—	wind ≈5 mph
6	2304	—	—	—	—	—	—	wind = 2 mph
7	2355	—	—	—	—	—	—	
8	20 oct 0017	—	—	—	—	—	—	
9	0048	—	—	1	?	1	?	
10	0104	1	?	—	—	1	?	

88.1.22.2

SIREN-ELICITED HOWLING RESPONSE

cation RIO BLANCO Project No. 83 Date 22 OCT 75 Investigators Sanz, Baker

rvey Route 30 mi / on map Weather windy, snowing

rsm 10/30/75

Station Number	Time	Response to First Sounding Groups	Response to First Sounding Individual	Response to Second Sounding Groups	Response to Second Sounding Individual	Total Response Groups	Total Response Individual	Notes on conditions affecting data; wind; proximity to humans, etc.
1								
2			Siren-elicited howling response					
3			survey not conducted because					
4			of weather conditions.					
5								
6								
7								
8								
9								
10								

P3.7.2.2

2.3.7 Avifauna

2.3.7 AVIFAUNA

2.3.7.1 Introduction - No changes occurred since Progress Report-2. See Section 3.9.1 in Progress Report-2 for the objectives of the avifauna studies.

2.3.7.2 Methods - Several methods have been used to determine the identity of bird species that occur within the study area on a seasonal and annual basis, and their density in and use of dominant habitats. Procedures have been described in Progress Report-1 and modifications have been described in Progress Report-2 and 4. For methods used in waterfowl surveys, see Section 2.3.7.2.3 in Progress Report-2. See Section 2.3.7.2.1 and 2.3.7.2.4.1 in Progress Report-4 for methodologies for general avifauna and aerial raptor studies, respectively.

2.3.7.3 Results

2.3.7.3.1 General Avifauna - The status, occurrence, and preferred habitats of the 129 species which have been observed in the study area during the first year's investigations are listed in Table 2.3-187. Definitions of terms used to describe status and occurrence are presented in footnotes to this table.

The remainder of this section summarizes information derived from strip transect censuses at the 15 transect locations during the first year of the terrestrial investigations. Emphasis of the discussion focuses on species considered to be the most important in each habitat. Generally, species achieving greater than 10% relative abundance are considered here as "important". Other species attaining a lesser numerical abundance are also addressed in events where it is necessary to clarify data according to the discussion of Confidence Level of Data given earlier. Although some species mentioned below occur in more than one of the censused vegetation types, their ecological requirements are discussed only once.

Table 2.3-187

OCCURENCE, ANTICIPATED STATUS, AND HABITATS AT TIME OF OBSERVATION
FOR BIRD SPECIES SEEN BETWEEN OCTOBER 1974 AND OCTOBER 1975 *

ORDER / FAMILY / (Species) Common Name	Occurrence**				Status **				Habitat at Time of Observation ***														
	Resident	Summer	Winter	Migrant	Common	Uncommon	Rare	Accidental	Uncertain	Aspen	Douglas fir	Upland Meadow	Mixed Brush (low elevation)	Mixed Brush (high elevation)	Pinyon-juniper (north slope)	Pinyon-juniper (south slope)	Pinyon-juniper/ Mixed Brush	Pinyon-juniper/ Sagebrush	Sagebrush (low elevation)	Sagebrush (high elevation)	Greasewood/ Sarebrush	Rabbitbrush	Riparian	Bottomland Meadow
CICONIIFORMES																							
ARDEIDAE																							
(Ardea herodias)																							
Great blue heron				x			x																x	
CICONIIDAE																							
(Plegadis chihi)																							
White-faced ibis				x			x																x	
ANSERIFORMES																							
ANATIDAE																							
(Anas platyrhynchos)																							
Mallard	x				x																		x	
(Anas strepera)																							
Gadwall		x				x																	x	
(Anas crecca)																							
Green-winged teal		x				x																	x	
(Anas discors)																							
Blue-winged teal		x				x																	x	
(Anas cyanoptera)																							
Cinnamon teal		x				x																	x	
(Aythya americana)																							
Redhead		x							x														x	
FALCONIFORMES																							
CATHARTIDAE																							
(Cathartes aura)																							
Turkey vulture		x					x								x	x								x
ACCIPITRIDAE																							
(Accipiter gentilis)																							
Goshawk		x							x	x														
(Accipiter striatus)																							
Sharp-shinned hawk		x							x					x										
(Accipiter cooperii)																							
Cooper's hawk		x				x								x	x	x	x	x						
(Buteo jamaicensis)																							
Red-tailed hawk	x				x									x	x		x	x	x				x	x
(Buteo swainsoni)																							
Swainson's hawk				x					x															x
(Buteo lagopus)																							
Rough-legged hawk			x		x							x	x						x	x			x	x
(Aquila chrysaetos)																							
Golden eagle	x				x							x					x	x	x	x			x	x
(Haliaeetus leucocephalus)																							
Bald eagle			x				x																x	x
(Circus cyaneus)																							
Marsh hawk	x				x							x												x
FALCONIDAE																							
(Falco mexicanus)																							
Prairie falcon	x						x					x				x			x					x
(Falco peregrinus)																							
Peregrine falcon		x		x			x								x	x								
(Falco columbarius)																							
Merlin				x			x					x												
(Falco sparverius)																							
American kestrel	x					x									x	x	x	x	x	x	x	x	x	x
GALLIFORMES																							
TETRAONIDAE																							
(Dendragapus obscurus)																							
Blue grouse	x					x				x	x			x										
(Centrocercus urophasianus)																							
Sage grouse	x					x								x					x	x				
GRUIFORMES																							
GRUIDAE																							
(Grus canadensis tabida)																							
Greater sandhill crane				x					x										x					

Table 2.3-187
(CONTINUED)

ORDER / FAMILY / (Species) Common Name	Occurrence: Resident	Occurrence: Summer	Occurrence: Winter	Occurrence: Migrant	Status: Common	Status: Uncommon	Status: Rare	Status: Accidental	Status: Uncertain	Habitat at Time of Observation: Aspen	Douglas fir	Upland Meadow	Mixed Brush (low elevation)	Mixed Brush (high elevation)	Pinyon-Juniper (north slope)	Pinyon-Juniper (south slope)	Pinyon-Juniper/ Mixed Brush	Pinyon-Juniper/ Sagebrush	Sagebrush (low elevation)	Sagebrush (high elevation)	Greasewood/ Saltbush	Rabbitbrush	Riparian	Bottomland Meadow
GRUIFORMES																								
RALLIDAE																								
(Rallus limicola) Virginia rail		x					x																x	
(Porzana carolina) Sora		x					x																x	
CHARADRIIFORMES																								
CHARADIIDAE																								
(Charadrius semipalmatus) Semipalmated plover				x			x							x										
(Charadrius vociferus) Killdeer		x			x																		x	
SCOLOPACIDAE																								
(Capella gallinago) Common snipe		x				x																	x	
(Actitis macularia) Spotted sandpiper		x				x																	x	
(Tringa solitoria) Solitary sandpiper		x				x																	x	
(Tringa flavipes) Lesser yellowlegs				x			x																x	
(Numenius americanus) Long-billed curlew				x			x																x	
RECURVIROSTRIDAE																								
(Recurvirostra americana) American avocet		x				x																	x	
PHALAROPODIDAE																								
(Steganopus tricolor) Wilson's phalarope		x				x																	x	
COLUMBIFORMES																								
COLUMBIDAE																								
(Zenaida macroura) Mourning dove		x			x										x	x			x		x		x	x
STRIGIFORMES																								
STRIGIDAE																								
(Otus asio) Screech owl	x								x															
(Bubo virginianus) Great horned owl	x				x						x				x	x								x
(Glaucidium gnoma) Pygmy owl			x						x		x													
(Asio flammeus) Short-eared owl			x						x															x
CAPRIMULGIFORMES																								
CAPRIMULGIDAE																								
(Phalaenoptilus nuttallii) Poor-will		x				x							x	x					x	x	x	x		
(Chordeiles minor) Common night hawk		x				x									x	x	x	x						x
APODIFORMES																								
APODIDAE																								
(Aeronautes saxatalis) White-throated swift		x				x				x		x		x		x						x		
TROCHILIDAE																								
(Selasphorus platycercus) Broad-tailed hummingbird		x				x				x					x			x						
PICIFORMES																								
PICIDAE																								
(Colaptes auratus) Common flicker	x					x				x					x	x	x	x						
(Dendrocopos pubescens) Downy woodpecker	x						x			x	x													

Table 2.3-187
(CONTINUED)

ORDER / FAMILY / (Species) / Common Name	Occurrence: Resident	Summer	Winter	Migrant	Status: Common	Uncommon	Rare	Accidental	Uncertain	Habitat at Time of Observation: Aspen	Douglas fir	Upland Meadow	Mixed Brush (low elevation)	Mixed Brush (high elevation)	Pinyon-juniper (north slope)	Pinyon-juniper (south slope)	Pinyon-juniper/ Mixed Brush	Pinyon-juniper/ Sagebrush	Sagebrush (low elevation)	Sagebrush (high elevation)	Greasewood/ Sagebrush	Rabbitbrush	Riparian	Bottomland Meadow
PASSERIFORMES																								
TYRANNIDAE																								
(Sayornis saya)																								
Say's phoebe		x			x																			
(Empidonax hammondii)																					x	x		x
Hammond's flycatcher		x							x		x													
(Empidonax wrightii)																								
Gray flycatcher		x				x									x				x					
(Contopus sordidulus)																								
Western wood pewee				x		x												x	x		x	x	x	x
ALAUDIDAE																								
(Eremophila alpestris)																								
Horned lark	x				x							x							x	x				x
HIRUNDINIDAE																								
(Tachycineta thalassina)																								
Violet-green swallow		x			x							x			x								x	x
(Iridoprocne bicolor)																								
Tree swallow		x				x									x	x		x						x
(Stelgidopteryx ruficollis)																								
Rough-winged swallow		x				x																	x	x
(Hirundo rustica)																								
Barn swallow		x				x																	x	x
(Petrochelidon pyrrhonota)																								
Cliff swallow		x			x																		x	
CORVIDAE																								
(Cyanocitta stelleri)																								
Steller's jay											x													
(Aphelocoma coerulescens)																								
Scrub jay	x				x								x			x	x	x	x	x	x	x		
(Pica pica)																								
Black-billed magpie	x				x							x	x						x		x	x	x	
(Corvus corax)																								
Common raven	x				x							x	x	x	x	x	x	x	x	x	x	x	x	x
(Corvus brachyrhynchos)																								
Common crow			x					x																x
(Gymnorhinus cyanocephalus)																								
Pinyon jay	x				x										x	x	x	x						
(Nucifraga columbiana)																								
Clark's nutcracker	x				x					x	x					x	x	x	x					
PARIDAE																								
(Parus atricapillus)																								
Black-capped chickadee	x				x					x	x													
(Parus gambeli)																								
Mountain chickadee	x				x					x	x				x	x								
(Parus inornatus)																								
Plain titmouse	x				x										x	x								
(Psaltriparus minimus)																								
Bushtit	x					x											x	x				x		x
SITTIDAE																								
(Sitta carolinensis)																								
White-breasted nuthatch	x					x									x									
(Sitta canadensis)																								
Red-breasted nuthatch	x				x						x				x									
(Sitta pygmaea)																								
Pygmy nuthatch			x				x					x												
CERTHIIDAE																								
(Certhia familiaris)																								
Brown creeper				x			x								x									

Table 2.3-187
(CONTINUED)

ORDER / FAMILY / (Species) / Common Name	Occurrence: Resident	Summer	Winter	Migrant	Status: Common	Uncommon	Rare	Accidental	Uncertain	Habitat at Time of Observation: Aspen	Douglas Fir	Upland Meadow	Mixed Brush	Mixed Brush (low elevation)	Mixed Brush (high elevation)	Pinyon-Juniper/ (north slope)	Pinyon-Juniper/ (south slope)	Pinyon-Juniper/ Mixed Brush	Pinyon-Juniper/ Sagebrush	Sagebrush (low elevation)	Sagebrush (high elevation)	Greasewood/ Saltbrush	Rabbitbrush	Riparian	Dry Land Meadow
PASSERIFORMES																									
TROGLODYTIDAE																									
(Troglodytes aedon)																									
House wren		x			x					x	x		x	x		x					x				
(Salpinctes obsoletus)																									
Rock wren		x				x																x			
MIMIDAE																									
(Oreoscoptes montanus)																									
Sage thrasher		x				x																x			
TURDIDAE																									
(Turdus migratorius)																									
American robin		x			x						x		x			x					x		x		x
(Catharus guttata)																									
Hermit thrush		x				x					x					x									
(Sialia currocoides)																									
Mountain bluebird		x			x							x	x	x		x	x	x	x	x		x	x	x	x
(Myadestes townsendii)																									
Townsend's solitaire			x			x				x															
SYLVIIDAE																									
(Polioptila caerulea)																									
Blue-gray gnatcatcher		x			x								x						x	x	x		x	x	
(Regulus calendula)																									
Ruby-crowned kinglet	x					x				x	x														
MOTACILLIDAE																									
(Anthus spinoletta)																									
Water pipit		x					x																	x	x
BOMBYCILLIDAE																									
(Bombycilla cedrorum)																									
Cedar waxwing				x				x				x													
LANIIDAE																									
(Lanius excubitor)																									
Northern shrike			x			x														x		x	x	x	x
(Lanius ludovicianus)																									
Loggerhead shrike				x				x																	x
STURNIDAE																									
(Sturnus vulgaris)																									
Starling				x	x																			x	x
VIREONIDAE																									
(Vireo vicinior)																									
Gray vireo		x				x											x								
(Vireo solitarius)																									
Solitary vireo		x				x										x	x								
(Vireo olivaceus)																									
Red-eyed vireo		x						x		x															
(Vireo gilvus)																									
Warbling vireo		x			x					x															
PARULIDAE																									
(Vermivora peregrina)																									
Tennessee warbler		x						x		x															
(Vermivora celata)																									
Orange-crowned warbler		x				x				x														x	
(Vermivora virginiae)																									
Virginia's warbler				x			x																	x	
(Dendroica petechia)																									
Yellow warbler		x					x									x									
(Dendroica coronata)																									
Yellow-rumped warbler		x			x															x		x	x	x	x
(Dendroica nigrescens)																									
Black-throated gray warbler		x			x											x	x								
(Oporornis tolmiei)																									
MacGillivray's warbler		x			x					x					x										
PLOCEIDAE																									
(Passer domesticus)																									
House sparrow	x								x																

Table 2.3-187
(CONTINUED)

ORDER / FAMILY / (Species) Common Name	Occurrence: Resident	Summer	Winter	Migrant	Status: Common	Uncommon	Rare	Accidental	Uncertain	Habitat at Time of Observation: Aspen	Douglas Fir	Upland Meadow	Mixed Brush (low elevation)	Mixed Brush (high elevation)	Pinyon-juniper (north slope)	Pinyon-juniper (south slope)	Pinyon-juniper/ Mixed Brush	Pinyon-juniper/ Sagebrush	Sagebrush (low elevation)	Sagebrush (high elevation)	Greasewood/ Sagebrush	Rabbitbrush	Riparian	Bottomland Meadow
PASSERIFORMES																								
ICTERIDAE																								
(Dolichonyx oryzivorus)																								
Bobolink		x					x																	x
(Sturnella neglecta)																								
Western meadowlark		x			x																		x	x
(Angelaius phoeniceus)																								
Red-winged blackbird		x			x																		x	x
(Euphagus cyanocephalus)																								
Brewer's blackbird		x			x																		x	x
(Molothrus ater)																								
Brown-headed cowbird		x					x								x									
THRAUPIDAE																								
(Piranga ludoviciana)																								
Western tanager		x					x						x											
FRINGILLIDAE																								
(Pheucticus melanochephalus)																								
Black-headed grosbeak		x					x			x														
(Carpodacus cassinii)																								
Cassin's finch		x					x				x	x											x	
(Carpodacus mexicanus)																								
House finch	x							x																x
(Leucosticte astrata)																								
Black-rosy finch			x			x							x								x			
(Leucosticte australis)																								
Brown-capped rosy finch			x			x							x								x			
(Spinus pinus)																								
Pine siskin		x				x					x												x	
(Loxia curvirostra)																								
Red crossbill		x				x					x													
(Chlorura chlorura)																								
Green-tailed towhee		x			x								x				x	x	x		x	x	x	
(Pipilo erythrophthalmus)																								
Rufous-sided towhee		x				x				x							x	x				x		
(Calamospiza melanocorys)																								
Lark bunting		x					x													x				x
(Ammodramus savannarum)																								
Grasshopper sparrow		x						x							x									
(Pooecetes gramineus)																								
Vesper sparrow		x			x							x	x					x	x		x			x
(Chondestes grammacus)																								
Lark sparrow		x				x												x	x		x			
(Amphispiza belli)																								
Sage sparrow		x				x												x	x	x				
(Junco hyemalis)																								
Dark-eyed junco			x	x	x					x	x		x	x	x		x				x	x	x	
(Junco caniceps)																								
Gray-headed junco	x				x					x	x		x	x	x						x	x	x	
(Spizella arborea)																								
Tree sparrow			x			x															x	x		x
(Spizella passerina)																								
Chipping sparrow		x			x										x	x					x			
(Spizella breweri)																								
Brewer's sparrow		x			x							x	x	x	x		x	x	x	x	x	x	x	x
(Zonotrichia leucophrys)																								
White-crowned sparrow		x			x							x									x	x	x	x
(Zonotrichia atricapilla)																								
Golden-crowned sparrow				x					x													x		

Table 2.3-187
(CONTINUED)

ORDER / FAMILY / (Species) / Common Name	Occurrence: Resident	Summer	Winter	Migrant	Status: Common	Uncommon	Rare	Accidental	Uncertain	Habitat at Time of Observation: Aspen	Douglas-fir	Upland Meadow	Mixed Brush (low elevation)	Mixed Brush (high elevation)	Pinyon-Juniper (north slope)	Pinyon-Juniper (south slope)	Pinyon-Juniper/ Mixed Brush	Pinyon-Juniper/ Sagebrush	Sagebrush (low elevation)	Sagebrush (high elevation)	Greasewood/ Saltgrass	Rabbitbrush	Riparian	Bottom Land Marshy
PASSERIFORMES																								
FRINGILLIDAE																								
(Passerella iliaca) Fox sparrow				x			x																x	
(Melospiza melodia) Song sparrow		x			x								x						x		x	x	x	x
(Calcarius mccownii) McCown's longspur			x					x				x												
(Calcarius ornatus) Chestnut-collared longspur		x						x				x												
(Plectrophenox nivalis) Snow Bunting			x					x						x										

* The following authorities are used for bird nomenclature:

American Ornithologists' Union, 1957. Checklist of North American Birds, Fifth edition. Port City Press, Baltimore, Maryland. 691 pages.

American Ornithologists' Union, 1973. Thirty-second supplement to the American Ornithologists' Union checklist of North American Birds (Fifth edition, 1957). Auk 90:411-419.

** Definitions of terms used to describe the status and occurrence of species listed in this table:

Occurrence (based on observations during first year, and supplemented where necessary by literature accounts).

Resident:	A species present during all seasons.
Summer Resident:	A species present throughout the summer, and assumed to nest in the region.
Winter Resident:	A species present during winter only.
Migrant:	A species stopping temporarily in the study area during its northward migration in the spring and its southward migration in the fall.

Status (based on observations during first year).

Common:	A species noted regularly in its normal habitat at the proper season of the year.
Uncommon:	A species of regular occurrence in small numbers, at the proper season of the year, but not likely to be observed on every census.
Rare:	A species present in small numbers, and noted only seldomly in proper habitat.
Accidental:	A species which is a casual visitor, and outside its normal range.
Uncertain:	A species whose status needs confirmation.

*** All habitats in which a species has been sighted during quantitative and qualitative censuses are marked for each species. As more sightings are made for wide-ranging species and for species which have generalized habitat responses, additional habitats can be checked.

2.3.7.3.1.1 Aspen (Transect #14) - From October, 1974 through OCtober, 1975, the aspen transect (north slope/8,100 ft) was surveyed five times during four seasons. The aspen transect could not be censused during December, 1974 because of adverse weather conditions. Twenty-one species were recorded in the aspen vegetation type over all sampling periods (Tables 2.3-214 and 2.3-215). On an annual basis, mountain chickadees and gray-headed juncos were the most abundant species recorded. (The mountain chickadee nested in this habitat; the gray-headed junco was the principal species observed during spring and fall migration periods.)

During the two fall censuses, six different species were recorded on transects in the aspen vegetation type. Thirteen individuals, representing four species, were recorded during October, 1974, and 11 individuals, representing four species, were recorded during October, 1975. The gray-headed junco and mountain chickadee were the most abundant species present during both fall sampling periods. The gray-headed junco is a common resident on Colorado's western slope (Davis, 1969). During winter, it occurs in small flocks at elevations below 8,000 ft, where it often mixes with other species and exploits food resources on brushy hillsides or in weed patches (Baily and Niedrach, 1965). During summer, gray-headed juncos migrate to elevations between 8,000 and 11,000 ft (Baily and Niedrach, 1965). This junco has only been recorded in small flocks in the aspen type during the migratory seasons, when it associates with black-capped chickadees, mountain chickadees, and dark-eyed juncos (spring), and with the two chickadee species during fall.

The mountain chickadee and black-capped chickadee are typical residents of the aspen community in western Colorado and eastern Utah (Twomey, 1942; Bailey and Niedrach, 1965). The mountain chickadee is a partial altitudinal migrant, with most migratory individuals being immature birds (Dixon and Gilbert, 1964). Although only black-capped chickadees have been observed along the aspen transect throughout the year, it is probable that adult mountain chickadees also are permanent residents.

In addition to the two chickadee species, broad-tailed hummingbirds and ruby-crowned kinglets are characteristic nesting species in this vegetation type.

Ruby-crowned kinglets nest throughout the sub-alpine zone in Colorado, usually placing their nests in evergreens. Occasionally this species nests in high altitude, deciduous forests (Bent, 1964a; Davis, 1969). The broad-tailed hummingbird arrives in the region during the first weeks of May and remains into September. This species is usually most abundant in mountainous transition zones (Bailey and Niedrach, 1965). Downy woodpeckers and common flickers also nested in the aspen type in low numbers. Both species winter in lower valleys (Bailey and Niedrach, 1965).

During the breeding season, the aspen transect supported 16 species that were fairly equitably distributed compared with other transects surveyed (Table 2.3-222 A decline in species diversity occurred during the migratory periods (Tables 2.3-218, 2.3-221, 2.3-223). During autumn, this was partially due to the high outflow of breeding species and the low influx of wintering species in the study area. Transient occurrences of migrant flocks prevents meaningful interpretation and comparisions of migration period diversity indices. During winter, the aspen type supported few species. Because an overwhelming preponderance of individuals belonged to a single species, equitability was very low (Table 2.3-220).

2.3.7.3.1.2 Douglas-fir (Transect #13) - From October, 1974 through October, 1975, the Douglas-fir (northern slope/8,100 ft) strip transect was surveyed five times during four different seasons. The Douglas-fir transect could not be censused during December, 1974 because of inclement weather. One hundred sixty-six birds, representing 18 species, were recorded (Tables 2.3-212 and 2.3-213). The mountain chickadee and red-breasted nuthatch tended to be the most abundant resident species.

During the two fall sampling periods, 34 individuals of 10 different species were recorded in this vegetative type. Twenty-one individuals, representing 5 species, were recorded during October, 1974, while 14 individuals, representing 7 species, were recorded during October, 1975. The October species composition exhibited considerable variation from year to year, yet total community densities were similar (Table 2.3-212 and 2.3-213). The downy woodpecker and gray-headed junco were the only species encountered during

both October sampling periods. Most birds tallied in the fall censuses were species which either had nested in this vegetation type but had not departed by the time of the census or were migrants. The most abundant species encountered during the October, 1974 sampling period were the gray-headed junco, dark-eyed junco, and ruby-crowned kinglet. Percent relative abundance values for the gray-headed junco were similar for both fall censuses. The robin and gray-headed junco contributed 74.9% of the relative avian abundance within the Douglas-fir transect during October, 1975. The high density and percent relative abundance calculated for the robin is considered an overestimate caused by extrapolation from a single sighting close to the central transect site. Nonetheless, this species is expected to occasionally appear in abundance in this vegetative type during migration periods. The robin is an ubiquitous species, occurring in most vegetation types within the study area during the breeding season, including Douglas-fir. It has not been observed during the winter, but stragglers from the north are known to winter in Colorado (Bailey and Niedrach, 1965). Davis (1969) refers to the robin as a common resident in western Colorado's forests and towns.

Large intermixed flocks of black-capped chickadees, mountain chickadees, red-breasted nuthatches, and pygmy nuthatches were observed in the Douglas-fir vegetation type during February. These passerines are commonly associated with western coniferous forests (Twomey, 1942; Davis, 1969). This transect supported the densest population of any of the transects sampled during February (Table 2.3-212). The disparity between the high density of birds on this transect and the low population density in the closely associated aspen stands is probably attributable to clumped distributions of winter flocks at the time of sampling.

The mountain chickadee and black-capped chickadee continued to be dominating species during the April, 1975 sampling period. By April, winter flocks had dissolved and birds of species which ultimately nested in the area were more evenly distributed throughout the coniferous vegetation type. Mountain chickadee and red-breasted nuthatch densities appeared to decline considerably

between February and April. These changes were probably a consequence of winter flock dispersal to surrounding habitats with the advent of territorial establishment rather than of an actual decline in regional populations.

The Douglas-fir stand exhibited the highest species diversity index of any transect for June 1975 (Table 2.3-222). This high diversity was attributed to a large number of species (12) which were present in almost equal numbers. No single species was dominant during the breeding season. Red crossbills, pine siskins, red-breasted nuthatches, and mountain chickadees, however, were more numerous than the other species during June, but Stellar's jays, ruby-crowned kinglets, and gray-headed juncos also attained relatively high densities. These species are generally associated with coniferous forests during the breeding season (Twomey, 1942; Bailey and Niedrach, 1965). The red-breasted nuthatch is the only species that was recorded year-round in the Douglas-fir vegetation type. This species' preferred habitat is the evergreen - aspen association ranging from the transition zone to timberline. Although red-breasted nuthatches are migratory, their movements are not predictable. Depending on the severity of the winter, individuals of this species may move south, or they may remain within their breeding range through the entire winter (Bent, 1964b).

The species diversity indices for the Douglas-fir type were relatively high during all seasons; the migratory periods exhibited the lowest comparative values (Tables 2.3-218, 2.3-221, and 2.3-223).

2.3.7.3.1.3 Upland Meadow (Transect #7) - Fifty-two birds, representing seven species, were recorded in the upland meadow vegetation type during five sampling periods (Tables 2.3-200 and 2.3-201). The horned lark was the most abundant species on an annual basis.

During the two fall sampling periods, three different species were observed in the upland meadow type. Horned larks, white-crowned sparrows, and chestnut-collared longspurs were recorded during October, 1974. A flock of 23 horned larks was observed during October, 1975. Species diversity was zero for this latter census (Table 2.3-223) because this was the only species recorded.

The horned lark was the only species that was consistently at this transect during spring, summer, and fall. During winter qualitative surveys, large flocks of this species were noted within the upland meadow vegetation type, but no individuals were tallied on the February census. This species flocks in large groups during winter months, moving from one feeding area to another. Consequently, it might appear only sporadically within this transect strip through the winter. Of the seven species encountered at this plot, the horned lark is the only species expected to be present from time to time during winter. During early spring, flocks break into pairs for nesting, which begins in the latter part of April (Bailey and Niedrach, 1965; Verbeek, 1967). The horned lark is a characteristic nesting species of Colorado prairies and meadows. It is a ground-nester, utilizing the forbs and grasses characteristic of upland meadow, tundra, and prairie vegetation types (Verbeek, 1967).

The chestnut-collared longspur, a resident of the central grasslands (Bent, 1968), was recorded in the upland meadow type during June, 1975 and in October, 1974. This is a species which was not anticipated to breed in northwestern Colorado. It is a local nester in Weld County, eastern Colorado, and previously had been recorded on only one occasion in western Colorado (Bailey and Niedrach, 1965). The presence of two individuals during June suggests a possible breeding pair.

Although no birds were noted in upland meadow during the winter strip transect surveys (Table 2.3-200), the horned lark, black-billed magpie, and common raven were recorded in this vegetation type during February qualitative surveys. Harsh windswept conditions usually prevail at Piceance Basin upland meadow sites during winter months (Ward, Slauson and Dix, 1974); these conditions undoubtedly contribute to the paucity of birds recorded during fall and winter surveys.

The horned lark was the only species observed in this vegetative type during the spring sampling period, when it was recorded in low numbers (Table 2.3-201).

The species diversity index for the breeding population in the upland meadow type was about average for all the transects (Table 2.3-222). Six species were recorded during June; the horned lark was observed most frequently, but due to differences in detectability, the vesper sparrow, chestnut-collared longspur, and Brewer's sparrow achieved highest breeding densities (Table 2.3-201). The vesper sparrow and Brewer's sparrow are among the most common summer residents in the study area. Brewer's sparrow is distributed throughout the west, especially in sagebrush communities (Bent, 1968). The vesper sparrow has an extensive breeding range in North America. It shows a preference for xeric, sparsely-vegetated sites. It is generally found in dry, upland fields with sparse grass and forb cover, or in fields with widely scattered shrubs or small trees (Wiens, 1969).

Comparisons of the number of breeding species between upland meadow vegetation type and the adjacent Douglas-fir and aspen vegetation types (Tables 2.3-201, 2.3-213, and 2.3-215) demonstrate upland meadows support the fewest breeding species. This situation probably exists because forests have varied understories and multiple strata of foliage not found in grasslands or meadows. The spatial heterogeneity characteristic of woodlands increases species diversity by increasing the number of different resources available (Pianka, 1971).

2.3.7.3.1.4 Mixed Brush (Trancect #5) - The mixed brush strip transect was surveyed six times during four different seasons, from October, 1974 through October, 1975. Fifty-five birds representing 14 species were recorded over all sampling periods (Tables 2.3-196 and 2.3-197). No one species was observed within this transect during more than one sampling period. Twenty-three individuals, representing six species, were recorded along the northern slope (elevation 7,200 ft) mixed brush transect surveyed during the two fall sampling periods. Mountain chickadees and gray-headed juncos were observed during October, 1974, and scrub jays, robins, mountain bluebirds, and dark-eyed juncos were recorded during October, 1975. The dark-eyed junco is a common winter resident of western Colorado and is

frequently encountered in small flocks of eight to ten, mixed with large numbers of gray-headed juncos (Davis, 1969). It is a seed-eater and winters wherever seeds are plentiful, from the prairie to elevations of 10,000 ft (Bailey and Niedrach, 1965). It utilizes most habitats within the study area and is particularly abundant in the mixed-brush vegetation type. Its breeding range is in Canada (Bent, 1968), and by June few dark-eyed juncos are still in the Piceance Basin.

The mountain bluebird, one of the most common summer residents within the study area, was observed in flocks of 8 to 20 along this transect during the fall. Bluebirds begin forming flocks in early August; the flocks enlarge until migration, which occurs during late September and early October (Power, 1966). Females and juveniles leave the area in early parts of migration; males leave later (Power, 1966). The mountain bluebird has an extensive breeding range which stretches from the Upper Sonoran Zone into the Alpine Zone. It is a cavity nester (Scott and Patton, 1975), and the pinyon-juniper woodland in the study area provides many suitable nesting sites.

Winter species composition varied. During December the black-billed magpie was predominant, but during the February censuses only a single northern shrike was recorded. The black-billed magpie is a resident throughout Colorado, occurring from the eastern grasslands to elevations of 8,000 ft. It nests in all types of woody plants including serviceberry, cottonwoods, junipers, and pinyons (Bailey and Niedrach, 1965). During winter months, magpies are common scavengers in the tract vicinity, and they are frequently observed feeding on dead animals. Its abundance during December 1974 was probably a response to carrion from the hunting season. The northern shrike is a common winter visitor to western slope valleys (Davis, 1969). Microtines appear to be their most frequent prey (Bent, 1965). According to strip transect and qualitative survey data, it is a regular winter resident of valleys in the study area, yet is present only in small numbers. Larger concentrations have been observed outside the study area along Piceance Creek (ECI, 1975a, 1975b).

Low species diversity indices were computed for the winter sampling periods in the mixed brush vegetation type (Tables 2.3-219 and 2.3-220). Only those birds that range over large areas during winter and have scavenging habits, such as the black-billed magpie and raven (Bent, 1964c), were apparently able to utilize this area efficiently during the winter months.

No birds were observed along this transect during the spring census period, but 5 breeding species, the white-throated swift, broad-tailed hummingbird, house wren, blue-gray gnatcatcher, and green-tailed towhee, were recorded in low numbers during June (Table 2.3-197). According to other published information on northwestern Colorado and northeastern Utah (Bailey and Niedrach, 1965; Davis, 1969; Hendee, 1929; Twomey, 1942), these five species do not normally arrive to nest in the region until early May.

2.3.7.3.1.5 Mixed Brush (Transect #12) - The strip transect at this location was surveyed five times during four different seasons. The transect was not censused during December, 1974 because of adverse weather conditions. One hundred fifty-six birds, representing 14 species, were recorded on this southern slope (elevation 8,300 ft) mixed brush transect (Tables 2.3-210 and 2.3-211). The gray-headed junco and the mountain bluebird were the most abundant species and were the only species recorded during more than one sampling period.

During the two fall sampling periods, four species were recorded in the southern slope mixed brush type. A large, mixed flock of dark-eyed juncos and gray-headed juncos was observed during October, 1974; a small flock of mountain bluebirds and a few Clark's nutcrackers were recorded during October, 1975. The October, 1975 species diversity index for this transect was considerably lower than the index for northern slope mixed brush (Table 2.3-223). The indices for both transects during October, 1974, however, were equivalent (Table 2.3-218). As indicated earlier, the transient utilization of habitats by fall and winter birds makes comparisons of diversity and abundances of limited value. It is a matter of chance whether the censuses will encounter a mixed flock within a transect during migration or winter. If one is encountered, a high species diversity index will result; if the

transect has few or no birds, the more likely situation, a low diversity will result.

During February, a flock of black rosy finches and brown-capped rosy finches and a separate flock of snow buntings were noted on this transect. The black rosy finch is a common winter visitor on the western slope; it and the brown-capped rosy finch nest above timberline and winter in valleys (Davis, 1969). The only known nesting areas of the brown-capped rosy finch are above timberline in Colorado, southeastern Wyoming, and northern New Mexico (Bailey and Niedrach, 1965). The different rosy finch species often associate with each other during the winter. In northern Utah, the rosy finch flocks arrive on wintering grounds during late October and early November, and depart during the last 2 weeks of March (King and Wales, 1964).

The snow bunting is an uncommon visitor to Colorado's eastern slope and has not previously been recorded in western Colorado (Bailey and Niedrach, 1965; Davis, 1969). The sighting is possibly the first record of the species in northwestern Colorado. The major portion of this species' range is located in the northern United States, Canada, and the arctic islands of North America (Bent, 1968). The snow bunting is a ground-dweller and seldom alights in trees. It is also very gregarious intraspecifically but not interspecifically.

A small group of mountain bluebirds and a flock of 10 gray-headed juncos were the only birds present during April. Twenty-three birds, representing seven species, were recorded during the June sampling period. Approximately 97% of the estimated relative abundance within this transect consisted of Brewer's sparrows, vesper sparrows, green-tailed towhees, and MacGillivray's warblers. All four species are summer residents of western brushland (Bailey and Niedrach, 1965; Davis, 1969). A few Steller's jays and common flickers were also recorded. The Steller's jay is a common resident of conifers in the Transition Zone and probably nests within Douglas-fir stands near the mixed brush transect. The common flicker is found in a variety of habitats throughout the study area and is a common year-round resident on the western slope (Davis, 1969).

Breeding species diversity and population densities were slightly higher for the southern slope mixed brush than for the northern slope mixed brush type (Table 2.3-222). The difference in the structural appearance and micro-environments of both variants of the mixed brush type may contribute somewhat to differences in bird occupancy. The number of strata comprising a vegetative community is normally an important determinant of bird species diversity (Bond, 1957; Hilden, 1965). Although the southern slope mixed brush stand does not support as many plant species as does the northern slope stand, its shrubs are larger and therefore may provide more microhabitats for bird utilization. Considerable microenvironmental variation also exists between the two transects due to differences in slope aspect and elevation. Odum (1959) reported variations in species composition and distribution due to microenvironmental differences between north slope and south slope variants of a single vegetation type.

2.3.7.3.1.6 Pinyon-Juniper (Transect #10) - From October, 1974 through October, 1975 the pinyon-juniper strip transect was surveyed six times during four different seasons. Eighty-two birds representing 22 species were observed within this stand (northern slope/6,900 ft), as summarized in Tables 2.3-206 and 2.3-207. The mountain chickadee was the most abundant year-round species, and the chipping sparrow was the most common breeding species.

Three species, the black-billed magpie, mountain chickadee, and ruby-crowned kinglet, were present in small numbers during October 1974. A greater number of species was present during October 1975, when the dark-eyed junco dominated relative abundance. Four species were recorded on winter censuses. The December sample included only five scrub jays, while the February sampling period disclosed a more diverse, denser avian community. During February, a large mixed flock of mountain chickadees, plain titmice, and red-breasted nuthatches comprised 98% of the total relative abundance. Two scrub jays were also observed at this time.

Scrub jays are common residents of areas containing Gambel oak (Davis, 1969). As indicated by strip transect and qualitative survey data, the scrub jay commonly occurs in mixed brush and pinyon-juniper stands on and near Tract C-a. It utilizes the pinyons, junipers, and oaks as sites for building its large nests. The plain titmouse is common in southern and western Colorado pinyon-juniper woodlands (Bailey and Niedrach, 1965). It is a cavity nester, preferring pinyons, junipers and Gambel oaks. The red-breasted nuthatch is the least common of the three nuthatch species in Colorado. Davis (1969) reported that it is a rare resident in western Colorado, where it nests in transition forests and winters at lower altitudes. This species has been recorded as a summer and winter resident within the Douglas-fir type and as a winter resident in the north slope pinyon-juniper type on the study area.

The spring sampling period failed to reveal any bird activity. Harsh weather conditions experienced throughout the April period of censusing may partially explain low bird numbers in areas where higher densities were expected.

Thirteen species were recorded on the June strip transect census. The chipping sparrow, mountain chickadee, and black-throated gray warbler accounted for 77% of the total estimated population density for this stand. The chipping sparrow is one of the most common sparrows in the 6,000 to 8,000 foot elevational zones in Colorado, where it nests in shrubs and small trees (Bailey and Niedrach, 1965). Northern slope pinyon-juniper woodlands which support a dense shrub understory provide ideal nesting habitat for the chipping sparrow. The mountain chickadee and black-throated gray warbler both nest in coniferous forests (Bailey and Niedrach, 1965; Bent, 1963a). The mountain chickadee is a common species in the pinyon-juniper woodland throughout the year, while the black-throated gray warbler is generally a common summer resident (Davis, 1969). The grasshopper sparrow observed and heard singing during June must be considered highly unusual in this habitat.

2.3.7.3.1.7 Pinyon-Juniper (Transect #9) - Fifteen species were tallied in the southern slope pinyon-juniper transect (7,000 ft) in six censuses from October, 1974 through October, 1975 (Tables 2.3-204 and 2.3-205).

Twelve species were present during the breeding season, but few individuals or species were observed utilizing this woodland during other periods of the year. The scrub jay was encountered in more seasons than any other species, but was never present in abundance.

During the two fall sampling periods, three species were recorded. A scrub jay and a mountain chickadee were observed during October, 1974, and mountain bluebirds and scrub jays were in this pinyon-juniper woodland the following fall. The species diversity index for October, 1975 was low in comparison with other transects surveyed, but was higher in October, 1974 (Tables 2.3-218 and 2.3-223). No birds were tallied during either winter census.

During April, a flock of pinyon jays contributed 87% of relative abundance at this transect. Only two other species were observed. The pinyon jay is a common resident of the pinyon-juniper woodland (Bailey and Niedrach, 1965; Davis, 1969); unlike other jays, pinyon jays often occur in large flocks. They build their nests in pinyon pines and junipers. They occur irregularly and often are present in large numbers one season but absent the next (Bailey and Niedrach, 1965). No pinyon jays nested in either of the censused pinyon-juniper communities during 1975.

The sparse, mature stand of pinyon-juniper on Transect #9 supported a relatively diverse avian population during June, in contrast to the poor diversity recorded for this vegetation type during other seasons (Tables 2.3-218 through 2.3-223). Twelve species inhabited this pinyon-juniper stand during summer. The most abundant nesting species were the bushtit and mountain bluebird. The bushtit inhabits the pinyon-juniper woodland of western Colorado. It is found in rugged, dry canyons where it nests in pinyons, aspen, tall sagebrush, mountain mahogany, and cottonwood-willow river bottoms (Bailey and Niedrach, 1965). The other species attaining greatest relative abundance are all characteristic nesting species of pinyon-juniper habitat.

Although little variation occurred between the number of species supported by the two pinyon-juniper transects (#9 and #10) throughout the year, the species found within each transect were not similar. Only five of the 12 breeding species in the southern slope stand (#9) occurred in northern slope pinyon-juniper (#10). This variation in species composition between the two stands may be partially attributable to the denser understory present in the northern slope stand. The north slope pinyon-juniper vegetation type provides more suitable habitat for those species associated with a woodland understory (e.g., green-tailed towhee, Brewer's sparrow, and chipping sparrow). The south slope pinyon-juniper vegetation type is located near small cliffs and a stream, both prime nesting sites for the flocks of white-throated swifts, rough-winged swallows, cliff swallows, and tree swallows that aerially feed on the transect's local insect population.

2.3.7.3.1.8 Pinyon-Juniper/Sagebrush (Transect #6) - One hundred forty-one birds representing 18 species were recorded for the pinyon-juniper/sagebrush transect (Tables 2.3-198 and 2.3-199) in six censuses from October, 1974 through October, 1975. No species was particularly abundant throughout the year; the mountain bluebird was the only species recorded during three or more sampling periods. Except for three mountain chickadees tallied during December, no wintering birds were observed.

Nine species were present in the pinyon-juniper/sagebrush type during two October censuses. A large flock of 70 horned larks was recorded during October, 1974, along with a small flock of mountain bluebirds, one scrub jay, and one mountain chickadee. This preponderance of horned larks produced a low diversity index (Table 2.3-218). By contrast, seven species having a relatively high equitability were present in October 1975, resulting in a high species diversity index (Table 2.3-223). In October, 1975, the bushtit, rufous-sided towhee, and sage sparrow comprised 91% of the total relative abundance. The bushtit, an extremely gregarious bird which often congregates in groups of 40 to 50 individuals (Bent, 1964c), was observed flocking in the pinyon pines and junipers. The rufous-sided towhees and sage sparrows were observed in the sagebrush understory.

The rufous-sided towhee is an uncommon resident of brush and Gambel oak on the Western Slope and during the winter is generally confined to valleys. It is less common in western Colorado than would be expected in view of its abundance in oak in eastern Colorado (Davis, 1969). This towhee is a ground-nester and generally doesn't nest until mid-June (Bailey and Niedrach, 1965). The rufous-sided towhee has not been recorded in the study area during the winter, but has been observed in small numbers in mixed brush communities throughout the remainder of the year.

The sage sparrow is a common but secretive species of the sagebrush type in northwestern Colorado and northeastern Utah (Twomey, 1942; Davis, 1969). Sage sparrows are ground-dwellers and feed primarily on insects. The sparrows congregate in loose flocks during late summer and fall, and most individuals migrate south in late September and October (Bent, 1968). This sparrow has been recorded in sagebrush and mixed brush types only during the fall; due to its secretive behavior, it is difficult to detect unless it is engaging in flocking, so the possibility of individuals nesting within this sampling area nonetheless exists.

The mountain chickadee was the only species observed in this transect during the winter sampling periods. Three individuals were recorded during December and none was seen during February. No birds were recorded on transect #6 during the spring census.

The stand of mixed pinyon-juniper and sagebrush supported a variety of breeding birds indicative of woodland and/or brushland communities in northwestern Colorado (Davis, 1969). Species such as the Brewer's sparrow, blue-gray gnatcatcher, and green-tailed towhee are typically associated with brush communities (Bent, 1964a, 1968); all three were common in the pinyon-juniper/ sagebrush type during June. The pinyon pines and junipers of the area attracted feeding tree swallows and cliff swallows, and nesting mountain bluebirds. The other common summer resident, the lark sparrow, was associated with open patches of grasses and forbs within this vegetation type. The blue-gray

gnatcatcher is a common summer resident of western Colorado's sage, pinyon-juniper, and mixed brush (Davis, 1969). According to Root (1967), blue-gray gnatcatchers shift their habitat preference in accordance with the seasonal changes of optimal food resources. The gnatcatcher is a foliage-gleaner, obtaining its insect diet primarily from shrubs.

The tree swallow is a common summer resident throughout Colorado (Bailey and Niedrach, 1965). During migration, this species often lingers in the Colorado plains until May, when it ascends into the mountains to nest sites in pine, spruce, and aspen. It is a cavity nester (Scott and Patton, 1975) and probably utilizes pinyon pines and junipers as nest sites, for it was observed rather commonly near or in the pinyon-juniper woodland type throughout the summer. It will nest in isolated pairs as well as semi-colonially (Graber, Graber, and Kirk, 1972). The cliff swallow is also a common summer resident in western Colorado, nesting on cliffs, buildings, and bridges (Davis, 1969). It is a common summer resident along the drainages in the study area, probably nesting in the many rock outcroppings associated with drainages. The cliff swallows observed within this transect were feeding on the local insect populations, but were probably not nesting due to a lack of suitable nest sites within the transect. However, small cliff faces are located 0.8 km (0.5 mi) south of the transect along the right fork of Stake Springs Draw. This area could support a nesting population of cliff swallows.

Lark sparrows are common summer residents in dry brushy areas in western Colorado (Davis, 1969). They nest on the ground and prefer areas in or adjacent to bare ground and short grass (Bent, 1968).

The June species diversity index for this transect was high in comparison with other transects. The pinyon-juniper/sagebrush transect is an ecotone (a place where two distinct communities intergrade); ecotones tend to contain a relatively large number of species because they often contain many of the organisms of each of the overlapping communities in addition to those organisms which are characteristic of and often restricted to the ecotone (Odum, 1971).

2.3.7.3.1.9 Pinyon-Juniper/Mixed Brush (Transect #4) - Thirty-one birds of 11 species were recorded within the pinyon-juniper/mixed brush transect (northern slope, 7,400 ft elevation) during six censuses (Tables 2.3-194 and 2.3-195). The black-billed magpie was the only species observed during more than two seasons. During winter and spring, no birds were present along this strip transect.

During the two fall sampling periods, seven species were recorded. The black-billed magpie and dark-eyed junco were observed during both fall censuses. Five other species were also recorded during October, 1975, when the mountain chickadee and dark-eyed junco were the most common.

Seven species (19 individuals) were observed along this transect during June. All were species typically associated with pinyon-juniper woodland and mixed brush communities in northwestern Colorado and northeastern Utah (Davis, 1969; Twomey, 1942). No one species numerically dominated the avian community during summer; mountain bluebirds, green-tailed towhees, and Brewer's sparrows were the most frequently observed species.

The green-tailed towhee is a common summer resident of western Colorado. It prefers Gambel's oak and serviceberry stands and is a rare winter resident in the valleys of western Colorado (Davis, 1969). It is found in all types of brushland within the study area during the breeding season and is one of the study area's most abundant summer residents.

The species diversity index for the June census conducted in the pinyon-juniper/mixed brush transect was considerably lower than the species diversity index for the June census conducted within the pinyon-juniper/sagebrush transect (Table 2.3-222). The species diversity indices computed for the other surveys conducted within these two transects either demonstrate slightly higher values for the pinyon-juniper/mixed brush transect or equal values for both transects (Tables 2.3-218 and 2.3-223).

2.3.7.3.1.10 Sagebrush (Transect #2) - During six surveys from October, 1974 through October, 1975, 27 birds of seven species were recorded in this big sagebrush stand at elevation 6,500 ft (Tables 2.3-190 and 2.3-191). More

species were present during the summer than during migration periods, and no birds were tallied on two winter censuses. The community had the lowest cumulative breeding bird density of the 15 vegetation types censused for birds.

Three species were recorded during the two fall sampling periods. The sage sparrow was recorded during both censuses, while the horned lark and mountain bluebird were noted only during the October, 1975 survey.

During summer, low numbers of lark sparrows, Brewer's sparrows, vesper sparrows, and lark buntings were recorded. This is the only location where lark buntings were observed during the first year of field censuses. This is a species which nests throughout Colorado in the Upper Sonoran zone. It is particularly abundant on the state's eastern grasslands. According to Bailey and Niedrach (1965), it was reported as a common species in Moffat County during 1957. Lark buntings appear to change nesting areas periodically; consequently, the uncommon status of the species within Tract C-a and adjacent areas could change over time.

2.3.7.3.1.11 Sagebrush (Transect #11) - Sixty birds of 12 species were recorded during five censuses of the big sagebrush vegetation type (Tables 2.3-208 and 2.3-209). This transect traversed a north-facing slope at 7,100 ft elevation. The transect was not sampled during December, 1974 because of adverse weather conditions. No species were observed during the October, 1974 census, but eight species were tallied during October, 1975. The yellow-rumped warbler, mountain bluebird, and vesper sparrow comprised 5% of the fall population estimated total relative abundance.

The yellow-rumped warbler is a common summer resident and uncommon winter resident in mountain forests of the western slope (Davis, 1969). It begins nesting by mid-June at elevations between 8,000 and 11,000 ft. Flocks of adult and immature birds commonly appear in mountain valleys and basins during the fall. The yellow-rumped warbler is one of the most common and conspicuous birds on Tract C-a during the fall, when it is often seen in small flocks of 8 to 10 in a variety of habitats.

According to data, the north slope sagebrush transect (#11) supported a denser and more diverse breeding population than that supported by the sagebrush community at Transect #2 (Tables 2.3-222, 2.3-209, and 2.3-191). This is partially explained by the denser sagebrush cover and the more diverse herbaceous layer which was evident at Transect #11. A more diverse plant community should generally supply more available microhabitats, thereby promoting a greater diversity of bird species.

2.3.7.3.1.12 Greasewood/Sagebrush (Transect #8) - The strip transect which censused the greasewood/sagebrush (flat 6,400 ft) vegetation type was surveyed six times during four seasons, between October, 1974 and October, 1975. One-hundred thirty-one birds of 21 species were recorded (Tables 2.3-202 and 2.3-203). No species was consistently abundant throughout the year, and virtually no birds inhabited the transect area during winter. During the two fall sampling periods, 12 species were observed. Yellow-rumped warblers, song sparrows, and white-crowned sparrows were the only birds recorded during October, 1974, but 10 species were observed on the October, 1975 census. The mountain bluebird, Brewer's sparrow, and vesper sparrow were the most abundant species in fall 1975, cumulatively attaining 72% RA.

The only species recorded during the winter sampling periods was a single scrub jay observed during December. Species diversity increased during the April sampling period when four species were recorded, including a large flock of 22 dark-eyed juncos and 22 gray-headed juncos. The spring flocks of juncos were probably preparing to migrate to the species' summer residence in the montane forests of Colorado, northwestern United States, and Canada (Bailey and Niedrach, 1965; Davis, 1969).

Of the 12 species recorded in this greasewood/sagebrush stand during June, the Brewer's sparrow and chipping sparrow together accounted for 65% of the relative abundance. This stand supported the largest population of Brewer's sparrows of any strip transect surveyed during June. Brewer's sparrow is one of the most common breeding birds on and close to Tract C-a.

The chipping sparrow is a common summer resident of Colorado's western slope in open areas interspersed with trees, particularly in the pinyon-juniper vegetation type (Davis, 1969). The first chipping sparrows generally arrive in flocks in the Upper Sonoran Zone of Colorado in late March, just about the time the tree sparrows depart for the north. During the April sampling period, chipping sparrows have been observed within the study area during qualitative surveys conducted in the mixed brush vegetation type in Corral Gulch. They have also been recorded as a common summer resident of the pinyon-juniper woodland vegetation type during qualitative surveys.

None of the species observed during June, with the exception of the scrub jay, was recorded on this transect during the winter or spring censuses, nor were any gray-headed or dark-eyed juncos, birds characteristic of this vegetation type in the winter, recorded during the June survey. This and examples from most other transects illustrate a seasonal theme which characterizes avian community dynamics in this part of the nation -- that of a high seasonal turnover of species utilizing habitats during summer and winter. A high percentage of breeding species in the Piceance Basin migrate to more southern areas for the winter.

2.3.7.3.1.13 Rabbitbrush (Transect # 3) - One hundred thirty-five birds of 17 species were recorded on six censuses at transect #3 (Table 2.3-192 and 2.3-193). The mountain bluebird was observed during more sampling periods than other species (October, 1974, April, 1975, June, 1975, and October, 1975). Winter and spring censuses recorded low densities.

Ten species were recorded during the two fall sampling periods. The species diversity index for this transect was the second highest of all transects for the October, 1975 sampling period, and highest of all transects for October, 1974 (Tables 2.3-218 and 2.3-223). Eight species were recorded during October, 1975, when the white-crowned sparrow and mountain chickadee comprised 63.3% of the total relative abundance for this sampling period. Five species were recorded during October, 1974. The mountain bluebird, gray-headed junco, and white-crowned sparrow accounted for 77% of the total relative abundance during this sampling period.

No birds were recorded during the December sampling period but 29 birds representing 3 species were recorded during February. A flock of 25 bushtits accounted for 88% RA for this sampling period. The bushtit is a fairly common resident of the brush and pinyon-juniper vegetation types in the study area. Only two species, the mountain bluebird and rufous-sided towhee, were recorded during the April census. Both were present in relatively small numbers.

Six species were recorded during June, when the Brewer's sparrow and green-tailed towhee together comprised 84% RA. A small flock of seven cliff swallows and one rough-winged swallow was also observed traversing the transect, feeding on flying insects.

2.3.7.3.1.14 Riparian (Transect #15) - The strip transect which traversed riparian habitat was surveyed five times during four seasons. This transect was not sampled during the December census period due to adverse weather conditions. Twenty-seven species were recorded during the five sampling periods (Tables 2.3-216 and 2.3-217). The red-winged blackbird, yellow-rumped warbler, and mountain bluebird were the most abundant species recorded on an annual basis. No birds were seen at this location during the February census.

Ten species were recorded during two autumn censuses. Seven species were observed during October, 1974, with the yellow-rumped warbler, mountain bluebird, and mountain chickadee most abundant (90% RA). During October, 1975, six species were recorded and the yellow-rumped warbler and the white-crowned sparrow comprised 93% of relative abundance. The species diversity index did not vary significantly from the October, 1974 sampling period (Tables 2.3-218 and 2.3-223).

A substantial increase in bird numbers occurred between the February and April censuses. Thirteen species were recorded during April in the riparian transect, whereas no birds were tallied during the winter census. The most abundant species during April were gray-headed juncos, dark-eyed juncos, mountain bluebirds, and red-winged blackbirds. This transect attained the

highest species diversity for all transects during the April sampling period (Tables 2.3-22i).

The variety of birds occupying the riparian transect during the June census period is indicative of the heterogeneity of habitat along this portion of Stakes Spring Draw. Many species that were present are usually associated with western riparian or brushland habitat types (Twomey, 1942; Bailey and Niedrach, 1965; and Davis, 1969). During the June survey, 14 species were noted. The total population was numerically dominated by song sparrows, red-winged blackbirds, and Brewer's sparrows.

The song sparrow is a common summer resident in brush and thickets near water, and less common in these habitat types during the winter (Bailey and Niedrach, 1965; Davis, 1969). It seems to prefer areas with mild winter weather (Tompa, 1962). The harsh winter conditions generally prevalent throughout the Piceance Basin undoubtedly limit the area's wintering song sparrow population. Only two sparrows have been recorded during the winter within the study area; these were observed in Ryan Gulch during a qualitative survey.

The red-winged blackbird is a common western slope resident, nesting in marshes and wintering in large flocks in the moutain valleys (Bailey and Niedrach, 1965; Davis, 1969). This blackbird is graminivorous most of the year, but becomes insectivorous while breeding (Willson and Orians, 1963). The red-winged blackbird is a common summer resident along the creeks in the study area, but has not been recorded during the winter. The density of red-winged blackbirds tripled between April and June, 1975. Male red-winged blackbirds migrate during March and early April and establish territories before females arrive. During the April census, males were present but few females had appeared. The species is polygynous, and one male can form simultaneous pair bonds with four or five females.

The riparian type supported the second largest number of species of all transects during June; nonetheless, the species diversity index (Table 2.3-222) was not one of the largest because of the preponderance of only three breeding species. In addition to species listed in Tables 2.3-214 and 2.3-215, four species of waterbirds were also noted on strip censuses of this habitat.

2.3.7.3.1.15 Bottomland Meadow (Transect #11) - The bottomland meadow (flat/6,300 ft) strip transect was surveyed six times during four seasons. Twenty-three species were recorded for the entire year (Tables 2.3-188 and 2.3-189). No species was particularly abundant throughout the year. During the two fall censuses, seven species were recorded, three species during 1974 and four during 1975. Horned larks comprised 82% of the relative abundance during the October, 1974 census. A water pipit and black-billed magpie were also recorded. Western meadowlarks, red-winged blackbirds, and mountain bluebirds numerically dominated the estimated avian population (97% RA) during October, 1975.

Four species were recorded in low numbers during the winter. Two species, the black-billed mapgie and common raven, were observed on both winter censuses. The horned lark and tree sparrow were also recorded during February. These species are all winter residents of the meadows and brushland within the study area. Five species were present during April including a single western wood pewee. The western wood pewee is normally a common summer resident of western deciduous and coniferous forests (Davis, 1969), but it is known to nest in Colorado from the prairies to elevations of 10,000 ft (Bailey and Niedrach, 1965). The presence of this species during April and the absence of sightings during the breeding season suggests the bird was a migrant which stopped to feed in the riparian vegetation before proceeding on to forested country to nest. The western wood pewee was sighted within the pinyon-juniper/sagebrush vegetation type during June. The pinyon pines and junipers are likely nesting sites for this pewee, as are the aspen and Douglas-fir vegetation types within the study area.

The influx of species to the bottomland meadow transect between April and June sampling periods was substantial, and 19 species were observed during June. The estimated population densities of most species were small. All were in the range of 0.1 to 0.9 birds/ha. All species encountered during June can be expected to inhabit meadows, pastures, and riparian vegetation types on Colorado's western slope (Bailey and Niedrach, 1965; Davis, 1969). During June, this habitat achieved a higher maximum diversity than any other transect attained in any season (Tables 2.3-218 through 2.3-223).

2.3.7.3.2 Upland Gamebirds

2.3.7.3.2.1 Sage Grouse - Opportunistic sightings of sage grouse were recorded during all field activities. Aerial surveys were conducted in April to locate sage grouse strutting grounds (leks) in the tract vicinity. The first survey was conducted on April 25 over 84 Mesa; the second covered an area west of Tract C-a. Results of two brood censuses conducted in the vicinity to investigate sage grouse nesting success have shown both areas to be inhabited by sage grouse. These were conducted July 14-15, 1975 along a 32 km (20 mi) route located in sagebrush and mixed brush vegetation types, the preferred nesting habitats for sage grouse (Patterson, 1952; Rogers, 1964).

During fall and winter field activities, 24 sage grouse were observed in sagebrush habitat on the eastern slopes of Cathedral Bluffs. Opportunistic sightings during fall, 1975 provided records of sage grouse in two other locations. Two sightings, the first of four and the other of one grouse (all adults), were recorded on the ridge northwest of the right fork of Stake Springs Draw within a sagebrush/mixed brush vegetation type. Four sage grouse (all adults) were reported on Cathedral Bluffs within a mountain shrub community.

The two aerial surveys revealed the presence of two strutting grounds west of Tract C-a. The first lek was occupied by 27 sage grouse (20 males, seven females) and the other was occupied by six sage grouse (four males, two

females). Both leks were in open areas surrounded by sparse sagebrush cover. Sage grouse strutting grounds were not observed on 84 Mesa (Figure 2.3-11). Mr. Ronald J. Krager, Wildlife Conservation Officer for the Colorado Divison of Wildlife, was consulted to obtain information on sage grouse utilization of 84 Mesa. Mr. Krager noted that, prior to the placement of a water pipeline across 84 Mesa by the Bureau of Land Management, grouse utilized an area in Section 19, T1S, R98W for strutting (Figure 2.3-11). However, over the last few years, the number of sage grouse using the lek has steadily decreased (Krager, personal communication, 1975). Sage grouse have not been observed displaying in the area during recent surveys.

During the early spring survey period, four sage grouse were observed in sagebrush habitat on the eastern slopes of Cathedral Bluffs. Three sage grouse were flushed from sagebrush habitat on 84 Mesa. None of these sage grouse was on a lek. Four sage grouse (one female, three chicks) were observed during the July 14, 1975 breeding census, and two flocks comprised of seven (two males, one female, four chicks) and 17 (three female, 13 chicks) birds, respectively, were seen during the July 15 census. All sightings were within a 1.6 km (1 mi) segment of the census route on the ridge of the right fork of Stake Springs Draw, within an upland sagebrush vegetation type. Two opportunistic sightings in this vicinity on July 30-31, 1975 involved 27 sage grouse.

Summer observations of sage grouse populations in two other locations within the study area included 13 (11 adults, two juveniles) on Cathedral Bluffs within a mountain shrub vegetation type, and two sightings of five and three sage grouse (adults and young, respectively) on Airplane Ridge within a sagebrush/mixed brush vegetation type. The repeated sightings of juveniles with adults indicate that sage grouse are nesting near each of the locations indicated above.

Rogers (1964) described sage grouse density in the region as "light" and indicated that sage grouse have only been observed in low numbers within sagebrush communities in the Piceance, Yellow and Douglas Creek drainages.

Rogers (1964) has recorded them on 84 Mesa, the only area in Rio Blanco County near Tract C-a where they have also been sighted by ECI personnel. A possible explanation for the reported scarcity of sage grouse in Rio Blanco County, according to Rogers (1964), is that a large amount of the sagebrush range in the basin is intermixed with pinyon-juniper, a combination apparently avoided by this grouse. Rogers (1964) also stated that sagebrush in Rio Blanco County occurs in steep, narrow canyons with little available water, habitats not preferred by sage grouse.

Sage grouse are apparently not limited to the sagebrush vegetation type in the study area; rather, they inhabit a variety of upland brush vegetation types on and near Tract C-a. All observations within the tract vicinity indicate a moderate population of sage grouse within the areas of upland sage and mixed brush vegetaion types in southwest portions of the study area, and a small population on 84 Mesa (Figure 2.3-11). There appears to be little seasonal migration of this population, although this is difficult to gauge because most sage grouse observations are from the spring and summer periods, and few sightings have occurred in winter.

2.3.7.3.2.2 Blue Grouse - Records of opportunistic sightings of blue grouse have been maintained throughout the first year. Blue grouse were also censused twice along a standard census route on June 11 and 12 during the blue grouse display season (Rogers, 1968) by procedures outlined earlier.

During fall 1974 and winter 1974-75, only five blue grouse were seen on Cathedral Bluffs, the area expected to support the greatest population of this gamebird. However, blue grouse were observed rather frequently, either opportunistically or during conduct of strip transects, during fall, 1975. The eight encounters, all within a 5 km (3 mi) section of Cathedral Bluffs, included 38 blue grouse. Seven of the eight encounters occurred within, or adjacent to, the Douglas-fir and aspen strip transects. During the September 30 - October 5, 1975 small mammal trapping period, 26 blue grouse were observed within the Douglas-fir grid and in an aspen stand adjacent to this grid. Four blue grouse were also seen within the Douglas-fir grid during the October, 1975 strip transect. One blue grouse was

recorded within the aspen transect during the fall census. The only record of blue grouse outside of an aspen or Douglas-fir stand during fall 1975 was a sighting of seven blue grouse within an upland meadow vegetation type located a few kilometers south of the Douglas-fir small mammal grid.

The Cathedral Bluffs area appears to support a fairly large population of blue grouse. During the road survey conducted June 11-12, 1975, 23 displaying male blue grouse were tallied. This amounts to 2.4 grouse/km (1.5/mi) of road. This compares to 0.14 grouse/km for the best 2.4 km section of road surveyed by Rogers (1968) in Colorado over a 3-year period. The many opportunistic sightings of blue grouse recorded during 1974 and 1975 (66 birds recorded to date) also suggest that a relatively large population inhabits the Cathedral Bluffs area (Figure 2.3-11). This blue grouse population is found year-round on Cathedral Bluffs, but localized seasonal movements apparently occur. During the breeding season, most individuals inhabit the meadow, mixed brush, and aspen/mixed brush ecotone areas. After breeding and resting, the birds appear to move to dense stands of Douglas-fir and aspen. However, not all the blue grouse migrate to heavily timbered areas; some individuals were still observed during the fall and winter in meadow and mixed-brush vegetation types. The absence of blue grouse in these habitats during the August survey and the large number of grouse observed on the Douglas-fir and aspen small mammal grids during the fall (compared to their absence in these grids during the breeding season) suggest that a portion of the population does migrate. According to Rogers (1968), the timing and extent of these movements are related to food availability and weather conditions.

2.3.7.3.2.3 Mourning Dove - Most mourning doves had left the study area by October, as evidenced by the lack of mourning dove observations on strip transect and qualitative censuses in October, 1974 and very few observations in fall, 1975. The few individuals observed during October, 1975 were recorded in riparian and lowland mixed brush vegetation types. Mourning doves had returned to the Piceance Basin by early April and were first observed in the Tract C-a at 84 Ranch on April 29.

The possibility of an earlier migration into the Piceance Basin cannot be ruled out, since no bird censuses were made during March and early April. Mourning dove fall migrations generally begin at the end of August; usually only scattered individuals are observed in breeding locales after mid-September. By the June census periods, the mourning dove appeared to be a common summer resident in the pinyon-juniper and greasewood/sagebrush vegetation types. During the June surveys, 17 sightings of mourning doves were recorded in the pinyon-juniper vegetation type, and three in the greasewood/sagebrush vegetation type.

The mourning dove is the most widely distributed game bird in the Tract C-a vicinity. During general field activities coinciding in time with the breeding season, this dove was observed in many habitats, with the greatest number of observations in pinyon-juniper and greasewood/sagebrush vegetation types. The preferred nesting sites of this species are usually close to water and trees, so actual breeding habitat tends to be more restricted than the range of vegetation types the mourning dove is capable of exploiting if water is well distributed. Trees are favored sites for roosting, daytime resting, and nesting (Davis and Anderson, 1973). The habitats in the study area most frequented by the mourning dove are thus in or adjacent to woodlands.

Mourning doves are not communal nesters, but they pursue gregarious habits soon after the breeding season terminates. From late July until fall migration, doves congregate in roosting places (Bent, 1963b). The pinyon-juniper woodland vegetation type in the study area provides many of these communal roosting sites for the mourning dove.

2.3.7.3.3 Waterfowl and Shorebirds - The Stake Springs Draw impoundment received light usage by waterbirds during fall 1974 and 1975 migration periods. During October, 1974, only the mallard was observed at the impoundment, and only 15 individuals of four species (mallard, green-winged teal, blue-winged teal, killdeer) were seen at the impoundment during counts made between October 6 and 13, 1975. During other field activities in September and October, 1975, 23 blue-winged teal, one killdeer, one common snipe, and nine mallards were observed in riparian habitat types within

the study area. The Piceance Basin is not recognized as a segment of any major migratory route within the Pacific waterfowl flyway, the major flyway west of the Continental Divide (Dr. Ronald A. Ryder, personal communication, 1975). This, plus the paucity of water in the Tract C-a vicinity, accounts for the scarcity of waterfowl observed during fall migration..

During spring, when more water is available, increased waterfowl utilization of the area occurs. In April 1975, ducks were present in Stake Springs Draw, Ryan Gulch, and Black Sulfur Gulch. Mallards and green-winged teal, totalling 50 birds, were recorded at the Stake Springs impoundment during counts on April 15 and 17. During other April field activities, mallards were observed in Ryan Gulch and Black Sulfur Gulch, and 54 birds consisting of mallards, green-winged teal, and blue-winged teal were seen at the Stake Springs Draw impoundment.

A total of five ducks and eight shorebird species was observed during the two summer sampling periods. In June, 11 species were recorded at the Stake Springs Draw impoundment. The mallard, green-winged teal, and common snipe were the most abundant. Wilson's phalarope, killdeer, spotted sandpiper, gadwall, cinnamon teal, sora, Virginia rail and blue-winged teal were also present, but in lower numbers. The semi-palmated plover, long-billed curlew and white-faced ibis were also recorded during general avian surveys in June. Waterbird abundances were relatively high during the August census period when a total of 62 birds was recorded. However, only four species, the mallard, killdeer, American avocet, and solitary sandpiper were present on the impoundment. The mallard was the most abundant species recorded during the August survey, and was observed during every count. On one morning, 35 mallards were observed feeding in the pond. The large numbers of mallards present during mid-August may be due to pre-migration flocking. Although the migration flights do not begin in earnest until late September, flights from local nesting areas to nearby feeding grounds occur in late August or early September (Kortright, 1967). Perhaps many of the mallards that nest in the Tract C-a vicinity congregate and feed in the Stake Springs pond before migrating south.

Results from the year's surveys indicated that usage of the area by ducks and shorebirds is greater during late spring and summer than during fall, but that waterbird populations within the general area are very low. Considerably more ducks were observed along Piceance Creek and its associated ponds (ECI, 1974; 1975a; 1975b; 1975c) than were seen within the Tract C-a study area. The scarcity of open water within the study area is undoubtedly the major limiting factor on the size of the resident and migratory waterfowl population.

In summary, the mallard, green-winged teal, blue-winged teal, killdeer, and common snipe are the most common waterfowl and shorebird species found within the study area. The Stake Springs impoundment and the riparian habitats within the study area support a small breeding and migrating population of these species.

2.3.7.3.4 Raptors

2.3.7.3.4.1 Aerial Surveys - Raptor aerial surveys were initiated during November, 1974 and were continued bimonthly until August, 1975. Raptor aerial surveys were not conducted during October, 1975 due to inclement weather and big game hunting seasons. Table 2.3-224 summarizes raptor data resulting from aerial surveys. Relative abundance for each sampling period and the entire year are also presented. However, the few small raptors recorded during aerial surveys are not a fair indication of the relative abundance of these birds on the study area, since small, low-flying raptors such as accipiters and falcons are difficult to detect from an aircraft.

The common raven was the most abundant raptor species, attaining 58% RA through the year. This species was encountered on every raptor survey. The golden eagle and rough-legged hawk were observed less frequently, but were the only other species with a relatively high RA percentage. The golden eagle was recorded during every survey except the one conducted during June.

Table 2.3-224 Raptor species encountered during aerial surveys, fall, 1974 through fall, 1975 for RBOSP

Species	11/74* Totals	% R.A**	12/74 Totals	% R.A.	1/75 Totals	% R.A.	2/75 Totals	% R.A.	3/75 Totals	% R.A.	4/75 Totals	% R.A.	6/75 Totals	% R.A.	8/75 Totals	% R.A.	Total by Species	Total % R.A. ***
Northern Bald Eagle	0	0.0	0	0.0	0	0.0	1	4.0	0	0.0	0	0.0	0	0.0	0	0.0	1	.7
Golden Eagle																		
Mature	5	41.7	3	33.3	2	7.7	3	12.0	3	13.0	2	18.1	0	0.0	0	0.0	18	14.4
Immature	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	11.1	1	.8
Marsh Hawk	1	8.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	.8
Cooper's Hawk	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	9.1	0	0.0	1	11.1	2	1.6
Red-tailed Hawk	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	9.1	3	30.0	1	11.1	5	4.0
Rough-legged Hawk	2	16.7	3	33.3	7	26.9	6	24.0	0	0.0	0	0.0	0	0.0	0	0.0	18	14.4
Peregrine Falcon	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	9.1	0	0.0	0	0.0	1	.8
American Kestrel	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	10.0	3	33.3	4	3.2
Common Raven	4	33.3	3	33.3	17	65.4	15	60.0	20	87.0	6	54.5	6	60.0	1	11.1	51	57.6
Unidentified Raptor	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	22.2	2	1.6
TOTAL	12	100.0	9	100.0	26	100.0	25	100.0	23	100.0	11	100.0	10	100.0	9	100.0	125	100.0

* Date

** Relative abundance = $\frac{\text{Total number of species A}}{\text{Total number of all species observed}}$.

*** Percent relative abundance for the entire year.

The rough-legged hawk is a winter resident in the Piceance Basin and was commonly observed between November, 1974 and February, 1975. The northern bald eagle was recorded once during February. The marsh hawk, Cooper's hawk, and American kestrel were observed in small numbers, but these species are not easily censused by airplane due to their small size and/or low flying habits. The marsh hawk was observed once during November and April; the Cooper's hawk was observed once during the spring and once during the summer, while the American kestrel was observed once in June and three times in August (Table 2.3-224).

The red-tailed hawk was not recorded frequently during the aerial surveys but was commonly recorded during ground investigations. One peregrine falcon was also observed during an April flight. The status of all the raptor species observed in the Tract C-a study area is discussed later in detail.

The distribution of raptor sightings demonstrate certain interesting trends (Figure 2.3-12). Most raptors were recorded within the eastern half of the study area and along the drainages. The raven was most frequently observed along Yellow Creek and 84 Mesa during the winter and spring. The majority of golden eagles was observed during the winter along Cathedral Bluffs. All rough-legged hawks, with the exception of one observed on Cathedral Bluffs, were recorded east of Tract C-a. The other raptor species have been observed too infrequently to speculate on distributional tendencies.

2.3.7.3.4.2 Ground Surveys - Raptors noted during all avian field activities conducted between October, 1974 and October, 1975 were recorded by species and location of observation. In the course of field investigations, all raptor nests encountered were examined and their location plotted on field maps. During late April and early June, potential raptor nesting habitats on Tract C-a and the surrounding area were traversed on the ground for four consecutive days to locate active nests. Results are given in Table 2.3-225.

Night owl surveys were initiated in December, 1974 and were repeated during April, 1975. Surveys were conducted on two nights during the two sampling periods.

Table 2.3-225 Active raptor nests located on or near Tract C-a during April, 1975 for RBOSP[1/]

Nest Number	Species	Contents of Nest	
		Eggs	Chicks
1	Red-tailed hawk	3	0
2	Red-tailed hawk	3	0
3	Red-tailed hawk[2/]	3	0
4	Red-tailed hawk	2	0
5	Red-tailed hawk	3	0
6	Red-tailed hawk	2	0
7	American kestrel	1	0
8	American kestrel	1	0
9	American kestrel	2	0
10	American kestrel	1	0
11	Great horned owl	1	2
12	Great horned owl	2	0
13	Great horned owl	0	2
14	Great horned owl	0	3
15	Great horned owl	0	1
16	Great horned owl	0	2
17	Great horned owl	1	3
18	Common raven	-	3
19	Common raven	-	2
20	Common raven	-	2
21	American kestrel	0	3
22	Marsh hawk	0	4
23	Marsh hawk	0	3
24	Cooper's hawk	2	1
25	American kestrel	0	2
26	Golden eagle	0	1
27	Marsh hawk	0	4

Table 2.3-225. (Continued)

Nest Number	Species	Contents of Nest	
		Eggs	Chicks
28	Cooper's hawk	0	2
29	Goshawk	0	1
30	American kestrel	0	2
31	Golden eagle	0	1

1/ Specific locations of all raptor nests discovered to date have been recorded.

2/ Nest and contents destroyed.

2.3.7.3.4.3 Status of Raptor Species in the Tract C-a Study Area

2.3.7.3.4.3.1 Turkey Vulture - Two turkey vultures were observed in the study area during summer and fall, 1975 sampling periods. This species is highly migratory within the western states (Brown and Amadon, 1968) and the majority of individuals leave Colorado by late September (Bent, 1961). The one individual observed during fall was probably a straggler. Turkey vultures have not been observed near Tract C-a during the winter.

The turkey vulture utilizes many habitat types and hunts over a wide area. Carrion comparises most of its diet, although it will kill young mammals and has been known to feed on insects (Grossmand and Hamlet, 1964). Its presence on Tract C-a and adjacent areas during the breeding season indicates that it is probably nesting in small numbers in the vicinity. No nests have been encountered, but potential nest sites exist on Tract C-a and adjacent areas. The preferred nesting sites are generally located in places inaccessible to predatory animals,or where the eggs and/or young cannot easily be reached (Bent, 1961). These sites tend to be cliffs, caves, hollow stumps, or in the midst of dense shrubbery (Bent, 1961; Brown and Amadon, 1968). In such locations, the vulture lays its eggs with little or no attempt to construct a nest (Bent, 1961).

2.3.7.3.4.3.2 Northern Bald Eagle - The bald eagle was observed within the study area during February but was not observed again through the remainder of the winter. This eagle was observed by ECI personnel within other areas of the basin along Piceance Creek during March, so it appears to be an uncommon winter resident of the Piceance Basin. Bald eagles were not recorded after March. The subspecies winters as far north as open water and food are available (Brown and Amadon, 1968). It nests only rarely in Colorado; most northern bald eagles nest in northern North America (Grossman and Hamlet, 1964). Tract C-a and environs do not provide suitable nesting habitat for this species since it prefers tall trees or large cliff faces in proximity to water (Bent, 1961; Brown and Amadon, 1968). Cathedral Bluffs, an area west of Tract C-a, provides possible nesting sites, but the rarity of the northern bald eagle as a Colorado summer resident indicates that it is an improbable nesting species along the Bluffs.

2.3.7.3.4.3.3 Golden Eagle - Golden eagles have been recorded within the study area throughout the year. This species hunts over open country and shows a strong preference for mammals in its diet (Brown and Amadon, 1968). According to results of a current study on the status of the golden eagle in western states (Boeker, 1974), the golden eagle population in Colorado, on a year-round basis, is 5.3 eagles per 1,000 sq mi. This is one of the highest desnities among the western states. The Tract C-a vicinity supported at least four adult golden eagles during the 1975 breeding season (Table 2.3-225); probably a few additional birds winter within the study area. Two active nests located on the study area each contained a single eaglet. It is difficult to ascertain from the total number of golden eagle sightings recorded outside of the breeding season how many individual golden eagles were actually observed. The home range of a golden eagle varies from 19 mi^2 in California to 200 mi^2 in heavily forested areas located in northeastern North America (Brown and Amadon, 1968). The home range size is dependent on such factors as prey density, season, and percentage of the range suitable for hunting (Brown and Amadon, 1968; Gordon, 1955).

2.3.7.3.4.3.4 Marsh Hawk - Field activities during 1974 and 1975 have substantiated that the marsh hawk is a fairly common raptor during the

breeding season but is infrequently observed during the winter. To date, three marsh hawk nests have been located in the study area (Table 2.3-225). The marsh hawk is a bird of open fields and marshes and avoids heavily forested areas (Burleigh, 1972). This species is a ground nester. The Tract C-a area probably supports more pairs than the three noted during 1975, but the nest of this species is difficult to locate because of the marsh hawk's preference for placing its nest on the ground in tall grass and shrubs. The pastures and sparsely vegetated mountain shrub stands within the study area provide suitable nesting habitat for this harrier.

This hawk is a migratory species in some parts of its geographical range, and a year-round resident in other areas (Bent, 1961). Davis (1969) describes the marsh hawk as an uncommon summer and common winter resident in western Colorado. Our data indicate that within the study area, the marsh hawk is a common summer resident and an uncommon winter resident.

2.3.7.3.4.3.5 Sharp-Shinned Hawk - Only one sharp-shinned hawk, recorded during summer 1975, has been observed on the study area. Davis (1969) described the sharp-shinned hawk as a common winter and rare summer resident. This accipiter prefers to nest in dense stands of conifers (Brown and Amadon, 1968; Grossman and Hamlet, 1967). There is little suitable nesting habitat for this small accipiter within the study area, but the open nature of much of the area should make it attractive as winter habitat for sharp-shinned hawks. Its apparent absence from the study area during the winter does not correspond with some of the literature for western Colorado (Davis, 1969). Until further field investigations are completed, it must be concluded that the status of the sharp-shinned hawk in the region is uncertain.

2.3.7.3.4.3.6 Cooper's Hawk - The Cooper's hawk has been observed fairly frequently during the spring and summer. It has not been recorded during fall and winter, but it has been observed during the fall in areas close to Tract C-a by ECI personnel. Davis (1969) described the Cooper's hawk as a common winter and rare summer resident in western Colorado. The Cooper's hawk is principally a woodland species (Burleigh, 1972) but it also nests in large shrubs such as Gambel oak (Bent, 1961). Two nests have been found within pinyon-juniper woodlands in the Tract C-a area (Table 2.3-225).

2.3.7.3.4.3.7 Goshawk - One pair of goshawks has been observed at their nest in an aspen grove along Cathedral Bluffs. Davis (1969) described this species as a rare resident of heavily wooded areas in western Colorado. Twomey (1942) indicated that the goshawk ranges from aspen habitats to timberline in eastern Utah. The goshawk generally nests in dense coniferous or deciduous forests adjacent to clearings (Brown and Amadon, 1968), where it feeds on large and medium-sized birds and mammals. Bent (1961) stated that, unlike other accipiters, the goshawk showed a definite preference for deciduous woods. Due to the scarcity of dense deciduous forests in the study area, the nesting goshawk population is probably small and limited to the Cathedral Bluffs area. This species has not been recorded during the winter.

2.3.7.3.4.3.8 Red-Tailed Hawk - Although few red-tailed hawks have been observed during aerial censuses, ground observations indicate this buteo is one of the most common raptors in the study area. The adult red-tailed hawk is opportunistic in its predatory habits, feeding on a variety of small mammal species. Its population levels generally fluctuate with changes in the local prey density (Craighead and Craighead, 1969). Brown and Amadon (1968) suggest the red-tailed hawk has the widest ecological tolerance of any buteo and perhaps of any hawk in North America. It resides in a greater variety of habitat types and has one of the widest distributions of any hawk in North America. The species does, however, show a preference for ecotone areas supporting trees (Brown and Amadon, 1968). This phenomenon is illustrated within the study area, where the red-tailed hawk frequents the various drainages with mixed brush bottoms and adjacent pinyon-juniper slopes. Its favored nesting site in the area is sandstone cliffs associated with pinyon-juniper woodlands, but an occasional nest is located in a mature pinyon pine or juniper. Six red-tailed hawk nests were located on the study area during April. All contained 2 or 3 eggs (Table 2.3-225). Red-tailed hawks are most abundant during the spring and summer, but a few individuals over-winter within the study area.

2.3.7.3.4.3.9 Swainson's Hawk - One Swainson's hawk was observed during summer 1975. Both Davis (1969) and Twomey (1942) refer to this species as an

uncommon summer resident and migrant in western Colorado and eastern Utah. Davis (1969) stated that occasionally a few Swainson's hawks winter in western Colorado.

2.3.7.3.4.3.10 Rough-Legged Hawk - Rough-legged hawks are common wintering raptors in the Tract C-a vicinity. This hawk appeared in the area by late November, 1974 and remained through the winter. Davis (1969) reported this species as an uncommon winter visitor in western Colorado and Twomey (1942) observed rough-legged hawks in the Uinta Basin, Utah only during migrations. According to Craighead and Craighead (1969), the presence of these birds in large numbers may indicate high populations of small rodents, which compromise the majority of this species' diet. The rough-legged hawk departed the Piceance Basin sometime between mid-March and early-August. Bent (1961) explained that the melting snow reveals the runways of voles, the major prey species of the rough-legged hawk.

2.3.7.3.4.3.11 Prairie Falcon - Seven sightings of prairie falcons have been recorded within the study area. The prairie falcon is a cliff nester and inhabits treeless areas, nesting rarely up to 12,000 ft elevation. The actual nest site is usually a ledge with some overhang, a pothole, or a cave (Brown and Amadon, 1968). Although no eyries have been recorded, the possibility of a pair of prairie falcons nesting within the study area exists. The most suitable nesting sites are the cliff faces along the western edge of Cathedral Bluffs. The rest of the study area shows poor nesting potential for this species. The prairie falcon is an uncommon nester in northwestern Colorado. The Colorado Division of Wildlife's ongoing raptor survey has identified a few eyries within the Piceance Basin north of the study area. Mr. Gerald Craig, Chief Raptor Biologist for the Division, indicated that the nesting prairie falcon population is sparse, and he does not think it is likely that many eyries exist in northwestern Colorado (personal communication, 1975). Until recently, this falcon was classified as "threatened" by the Federal government.

In winter, the prairie falcon moves to lower, windswept, winter wheat areas, where horned larks concentrate. Horned larks constitute the principal winter food of this falcon (Brown and Amadon, 1968). The numerous horned larks occurring on the study area during winter might explain the presence of the one prairie falcon recorded in December. The presence of this bird indicates that it is a rare winter resident within the study area.

2.3.7.3.4.3.12 Peregrine Falcon - The peregrine falcon, classified as an endangered species (United States Department of the Interior, "Threatened Wildlife of the United States," 1973), was observed four times within the study area during spring and summer 1975. The peregrine falcon is considered a rare resident breeder in northwest Colorado (Bailey and Niedrach, 1965). Mr. Gerald Cra (personal communication, 1975) noted that this species has nested and fledged young from eyries in northern Colorado and possibly nests in an area about 32 km (20 mi) southeast of Tract C-a. Enderson and Craig's (1974) treatise on the status of the peregrine falcon in the Rocky Mountains demonstrated that this species has experienced a population decline over the last few decades. The likelihood of a peregrine falcon nesting within the study area is remote, due to the lack of large cliff faces and the paucity of water within the area (G. Craig, personal communication, 1975).

The peregrine falcons observed during April and August may have been migrants. The species' northerly migration from Central and South America generally takes place in March and April (Brown and Amadon, 1968). The peregrine falcons observed during July could have been unpaired individuals or nesting adults. According to Mr. Craig (personal communication, 1975), a peregrine falcon could possibly hunt 33 km from its eyrie, so these individuals could have been associated with the suspected eyrie located within this radius of Tract C-a.

2.3.7.3.4.3.13 Merlin - The merlin was recorded five times during October, 1975 sampling period within bald and mixed brush vegetation types. It has not been recorded during other sampling periods. This falcon is a rare winter visitor in western Colorado and was formerly a summer resident of the region (Davis, 1969). It is a bird of open country and is seldom

found within forested areas unless there are large open spaces interspersed in the stand (Brown and Amadon, 1968). It preys chiefly on small birds, especially the inhabitants of the ground or low vegetation such as horned larks and finches (Brown and Amadon, 1968). The merlin's major breeding range is north of the continental United States. The majority of merlins winter in the southern United States, the Carribbean, and northern South America (Bent, 1961). However, eastern Colorado supports a small wintering population.

The height of the fall migration is between mid-September and mid-October, coinciding with the height of songbird migration (Bent, 1961; Brown and Amadon, 1968). The individuals recorded on the study area during fall, 1975 were probably migrants, resting and feeding on Cathedral Bluffs for a few days.

2.3.7.3.4.3.14 American Kestrel - The American Kestrel, one of the most abundant raptors encountered during the spring, summer,and fall, was observed throughout the study area. Seven kestrel nests have been located. The four nests found during April each contained one or two eggs and the three nests located in June each contained two or three chicks. Unlike most falcons, the kestrel will nest in deserted woodpecker holes and hollow trees as well as on cliff faces (Craighead and Craighead, 1969; Cooper, 1974). The small cliff faces scattered throughout the sampling area and the stands of pinyon-juniper woodland could support a substantial nesting population of kestrels. The kestrel's diet during the breeding season consists primarily of mice, small birds, and insects (Craighead and Craighead, 1969). Kestrels have been observed in low numbers in the study area during winter. A number of authors (Bent, 1961; Heintzelman and Nagy, 1968) have suggested that a low percentage of American kestrels over-winter within their breeding areas. This depends primarily on food availability; their winter diet generally consists largely of meadow mice (Craighead and Criaghead, 1969).

2.3.7.3.4.3.15 Common Raven - The common raven is the most abundant resident raptor within the study area. It is a fairly common bird of the mountains in western Colorado (Bailey and Niedrach, 1965; Davis, 1969).

Three raven nests were located and due to the large numbers of ravens encountered during the summer, many other active nests certainly exist. The preferred nesting site is a crevice in a cliff face (Burleigh, 1972). These next sites are in such inaccessible places that locating them is often difficult. The raven is primarily a scavenger and commonly competes with magpies and eagles for carrion (Bailey and Neidrach, 1965); however, it also takes prey (Bent, 1964c). They are found in large numbers throughout the year in the study area and are particularly gregarious during winter. It is not unusual to see flocks of 10 or more ravens at one time during the fall and winter.

2.3.7.3.4.3.16 Screech Owl - One screech owl was recorded during the December, 1974 night owl transect. This species prefers well-wooded creek bottoms and open woodland adjacent to grainfields, meadows, brushland, or grassy valleys (Karalus and Eckert, 1974). It is an uncommon resident in western Colorado (Davis, 1969). Screech owls are most active directly after sunset, and feed primarily on frogs and mice. They roost during summer days on branches in heavy tree foliage and in natural tree hollows during winter (Karalus and Eckert, 1974). Although only one individual was recorded on the study area, the screech owl is probably an uncommon resident of Piceance Basin. It is not a migratory species (Karalus and Eckert, 1974), yet there are times when seasonal movements have been recorded. These movements are largely dependent upon the severity of winter and prey availability (Karalus and Eckert, 1974).

2.3.7.3.4.3.17 Great Horned Owl - The great horned owl is the most abundant nocturnal raptor within the study area. Three great horned owls were recorded during the December 1974 night owl transects and one was recorded during the April, 1975 transects. Many opportunistic sightings have been made in a variety of habitats throughout the year. This species is a locally common resident in woodlands throughout western Colorado (Davis, 1969). The great horned owl and the red-tailed hawk often inhabit and hunt the same territory, the hawk by day, the owl by night (Orians and Kuhlman, 1956).

Although the great horned owl generally hunts at night, it is apt to be seen on the wing during all times of day. The great horned owl has one of the most varied diets of any North American raptor. It will eat almost any live prey but will rarely scavenge. It shows a preference for rodents, cottontail rabbits, skunks, crows, and other owls (Craighead and Craighead, 1969; Karalus and Eckert, 1974).

The nest of a great horned owl is generally an abandoned red-tailed hawk nest on cliffs or tall trees. The many small sandstone cliffs and stands of pinyon pines and junipers within the study area provide ample nesting sites for this species. Seven great horned owl nests were discovered, all of which contained eggs and/or young (Table 2.3-225). The great horned owl is one of the earliest nesting raptors; its courtship begins in November or early December (Karalus and Eckert, 1974). This species is essentially non-migratory (Orians and Kuhlman, 1956), but during severe winters when prey becomes difficult to find, some seasonal movements occur (Karalus and Eckert, 1974).

2.3.7.3.4.3.18 Pygmy Owl - One pygmy owl was recorded during the December, 1974 night owl transect. Davis (1969) described this species as an uncommon, rarely-observed resident of mountain forests in western Colorado. It sometimes comes down into the lower valleys in winter. It feeds primarily on small and medium-sized birds and small mammals (Karalus and Eckert, 1974). The pygmy owl is a cavity nester and ordinarily uses the abandoned hole of a hairy woodpecker or common flicker (Scott and Patton, 1975). The presence of the pygmy owl during December indicates that this species is a winter resident; due to the paucity of sightings, its status is undetermined.

2.3.7.3.4.3.19 Short-eared Owl - Two short-eared owls were recorded during the December, 1974 night owl transect. The short-eared owl is an uncommon winter visitor to open fields in western Colorado (Davis, 1969) where it feeds primarily on meadow voles. The short-eared owl, unlike the great horned owl and screech owl, is a restricted feeder; it feeds principally on one or two prey species (Craighead and Craighead, 1969; Karalus and Eckert, 1974). Although grassy fields and marshlands are its preferred habitat, the short-eared owl is often found in a variety of habitats ranging

from the alpine tundra to city parks. The short-eared owl does not generally breed in northwestern Colorado (Davis, 1969; Karalus and Eckert, 1974).

2.3.7.3.5 Summary of Quarterly Data (September through November, 1975)

A total of 34 bird species were encountered during all avian census activities conducted during the reporting quarter.

Emlen strip transects were surveyed from October 6-13, 1975, during which 29 species were recorded. Waterfowl surveys at the Stake Springs impoundment were also conducted in mid-October. Three waterfowl species, the mallard, green-winged teal, and blue-winged teal, and one shore bird, the killdeer, were observed in small numbers.

A raptor aerial survey was conducted on November 6, 1975. Two raptor species, the golden eagle and raven, were recorded with the raven being the more abundant species.

2.3.7.4 Summary and Conclusions

The largest number of birds and the greatest number of species encountered during the two fall sampling periods occurred within the rabbitbrush, greasewood/sagebrush, Douglas-fir, and riparian vegetation types. The pinyon-juniper (south slope), mixed brush (north slope), upland meadow, and sagebrush (flat) types exhibited a paucity of species and low total numbers of birds during October, 1974 and 1975 (Tables 2.3-188 through 2.3-223). The mountain bluebird, mountain chickadee, gray-headed junco, dark-eyed junco, horned lark, white-crowned sparrow, and yellow-rumped warbler were observed in greater numbers than any other species during the autumn surveys.

The October, 1974 sampling period probably occurred near the end of the fall migration for most bird species. Some migrating birds such as the mountain bluebird, western meadowlark, and white-crowned sparrow were still present in the study area. A greater number of summer resident species was present during the October, 1975 census period. The mild fall weather that occurred during 1975 probably resulted in later migratory exodus in comparison with the 1974 fall migration.

The bottomland meadow, mixed brush (south slope), pinyon-juniper (north slope), and Douglas-fir vegetation types supported the largest number of birds and the greatest species diversity during the two winter sampling periods. The sagebrush (flat and north slope), pinyon-juniper/mixed brush, pinyon-juniper (south slope), upland meadow, and the greasewood/sagebrush vegetation types exhibited few or no birds during the two winter censuses.

Migratory species encountered in October had departed the area of investigation by winter, while more northern migratory species such as the northern shrike and tree sparrow had migrated into the region after the fall sampling period. The black-billed magpie, common raven, red-breasted nuthatch, and mountain chickadee were the most abundant species within the study area during the winter.

The December census results exemplified the sparseness of birds, which is typical of these portions of the temperate region during late fall and winter. The avifauna encountered during February included species which are probably typical of Tract C-a's habitats during winter. The mid-winter avifauna was comprised of 23 species, all of which were observed in low numbers. The horned lark, pinyon jay, mountain chickadee, red-breasted nuthatch and the tree sparrow comprised about 60% of all individuals observed.

During April, the largest number of birds and the greatest number of species were encountered in aspen, Douglas-fir, south slope pinyon-juniper, greasewood/sagebrush, riparian, and bottomland meadow vegetation types. The bottomland types exhibited low species diversity and low numbers of birds during this sampling period (Tables 2.3-188 through 2.3-223). Strip transect censuses documented the presence of 27 species during April. Qualitative count surveys along with all other field censuses conducted in early spring accounted for an additional 34 species. The April sampling period occurred near the starting point of the spring migration for most bird species. Many summer residents such as the mourning dove, Say's phoebe, western wood pewee, tree swallow, rough-winged swallow, barn swallow, yellow-rumped warbler, orange-crowned warbler, Virginia's warbler, and green-tailed towhee had appeared in small numbers.

Results of the April censuses were thus a composite of late winter and early spring populations. Many areas showed the uneven pattern of bird distribution typical of the winter, while other areas hosted a considerable variety of species and numbers. Wintering species such as the rough-legged hawk, northern shrike, and tree sparrow had begun migration northward. The tree swallow, rough-winged swallow, barn swallow, pinyon-jay, mountain chickadee, mountain bluebird, yellow-rumped warbler, red-winged blackbird, dark-eyed junco, gray-headed junco, vesper sparrow, and chipping sparrow were the most frequently observed species during the early spring field sampling period. Of these, the mountain bluebird and gray-headed junco were exploiting a wider range of vegetation types than were other species. These 12 species accounted for more than 65% of the birds observed during the early spring surveys.

As with the fall migration period, any census of avian species during a transition stage must be analyzed with caution. During these transitory periods, species migrating in flocks tend to move along certain topographic features such as a drainage, river valley, canyon, etc. Species comprising these flocks generally display a less specific attachment to favored habitat than they exhibit during the breeding season. The uneven distributional pattern of avian species in large areas of favored habitat can further be explained by inclement weather and the tendency for species to form large intermixed flocks during migration (Lack, 1960; Graber and Graber, 1963; Graber, 1968; Brewer, 1972).

During summer, the largest number of birds and the greatest species diversity were encountered within the riparian, bottomland meadow, Douglas-fir, aspen, and all pinyon-juniper vegetation types (Tables 2.3-188 through 2.3-223). The rabbitbrush, sagebrush, mixed brush, and upland meadow vegetation types supported fewer species and low total numbers of birds in comparison with the aforementioned vegetation types. June censuses occurred during the height of the breeding season for most species. The variety of vegetation types present in the study area provided suitable nesting sites for many species, as demonstrated by the relatively high diversity recorded during the summer season. Of the 96 species recorded during this sampling period, 42 species were not present during autumn, winter, or spring censuses. The mountain bluebird, green-tailed towhee, chipping sparrow, Brewer's sparrow, and vesper sparrow were the most frequently observed species during the summer sampling period.

On an annual basis, the riparian community and adjacent habitats supported the greatest bird density and diversity throughout the year, while the sagebrush and rabbitbrush communities supported the lowest number of species and individuals.

In the southwest portions of the study area, a relatively large population of sage grouse exists on a year-round basis within areas of upland sagebrush and mixed brush vegetation types. There also is a relatively large population of blue grouse along Cathedral Bluffs. The blue grouse primarily inhabits upland meadow, mixed brush, and aspen/mixed brush ecotonal areas during the breeding seasons; during winter, it frequents dense stands of Douglas-fir and aspen. The mourning dove is the most widely distributed gamebird within the study area during the breeding and migration periods. During these seasons, it was observed in a variety of habitats, with the greater number of individuals noted in pinyon-juniper and greasewood/sagebrush vegetation types.

In the Tract C-a vicinity, a few surface ponds and intermittent streams create isolated islands of habitat for waterfowl and shorebirds. Because surface water is restricted in distribution in northwestern Colorado, such habitat types have an unusually high ecological value in this region. Fourteen waterfowl and shorebird species were recorded within the Tract C-a vicinity. Although usage of the area by waterfowl and shorebirds is greater during late spring and summer than during fall, the overall waterbird population within the study area is small. The paucity of open water is undoubtedly a major limiting factor on the size of the resident and migratory waterfowl populations. The mallard, green-winged teal, blue-winged teal, killdeer, and common snipe were the most common waterfowl and shorebirds utilizing surface waters of the area.

The distribution of raptors observed during the aerial surveys demonstrated a number of interesting trends. The majority of raptors were recorded within the eastern half of the study area, along the drainages. Frequently observed raptors were the raven, rough-legged hawk, and golden eagle. Aerial surveys were not conducive for sightings of small, low flying raptors such as accipiters and falcons. Thus, the few small, low-flying raptors recorded during aerial surveys were not a fair indication of the relative abundance of these birds of prey on the study area. Fourteen diurnal and four nocturnal

raptors were encountered between October, 1974 and October, 1975. The red-tailed hawk was frequently observed during all times of the year except during the late winter sampling period. The rough-legged hawk was the most common wintering raptor. This species breeds on the arctic tundra, so it was not present during summer. The golden eagle was observed frequently throughout the year. A greater number of golden eagle observations occurred during winter than during other seasons, suggestive of a winter concentration in the Piceance Basin. The marsh hawk and American kestrel were common nesters and a few individuals were recorded during the winter. The common raven was the species recorded most frequently throughout the year; it was present in all vegetation types within the study area. Other diurnal raptors observed less frequently were the turkey vulture, goshawk, sharp-shinned hawk, Cooper's hawk, Swainson's hawk, bald eagle, prairie falcon, merlin, and peregrine falcon.

The night owl surveys demonstrated the presence of four nocturnal raptor species, the pygmy owl, short-eared owl, screech owl, and great horned owl. The latter is the most common owl within the study area and was encountered in a variety of vegetation types.

Thirty-one active nest sites were located on the study area during the raptor nesting survey. Six red-tailed hawk, seven American kestrel, seven great horned owl, three common raven, three marsh hawk, two Cooper's hawk, two golden eagle, and one goshawk nests were encountered.

The year's census data indicate that most species encountered in the area of investigation are those expected to be present based on published information from northwestern Colorado and northeastern Utah (Bailey and Niedrach, 1965; Davis, 1969; Hayward, 1967; Hendee, 1929; Twomey, 1942).

Several unexpected species were observed. Most have been recorded previously in northwestern Colorado, but only as unusual occurrences.

- White-faced Ibis - Two individuals were observed in bottomland areas where seepages or annual streams occur. The first bird, observed on April 17, was foraging along the stream bottom in Corral Gulch 1 km west of 84 Mesa Ranch. The second bird, observed on April 26, was observed near a spring seepage in Little Duck Creek. Both birds were photographed. The white-faced ibis, occurring in very small numbers, is probably a regular migrant in both spring and fall to northwestern Colorado. Twomey (1942) found this species to be a common spring migrant to the Uinta Basin area of Utah. Davis (1969) considers the bird to be a rare visitor to the western slope, while Bailey and Niedrach (1965) list white-faced ibis records only for Gunnison County, Colorado. Martin, Baldwin, and Reed (1974) observed individual flocks of 8-15 and 42 birds at ponds in the vicinity of Hayden, Colorado, in early April and early May, 1973 respectively.
- Sora - On June 6 and 11, 1975, soras were observed at the Stake Springs Draw pond. Davis (1969) described the sora as an uncommon summer resident of the cattail swamps in western Colorado.
- Long-billed Curlew - On June 2, 1975 a long-billed curlew was recorded in a flooded pasture along Ryan Gulch. This species is considered rare west of the Colorado Continental Divide (Bailey and Niedrach, 1965). Martin, et al. (1974) recorded one individual on agricultural fields near Craig during the summer of 1971.
- Short-eared Owl - Two individuals were encountered during the owl census conducted December 17, 1975. Davis (1969) classified this species as an uncommon winter visitor to open fields. The species was noted by Rockwell (1908) in the winter of 1904-05 in Mesa County. Felger (1910) observed a pair in Moffat County in April, 1924. Twomey (1942) reported that one short-eared owl was seen at the Ashley Creek marshes of northeastern Utah in late September 1937.

- Red-Eyed Vireo - Two red-eyed vireos were recorded in an aspen stand along Cathedral Bluffs during a qualitative survey. This species is a rare visitor to western Colorado (Bailey and Niedrach, 1965; Martin, et al., 1974). Its preferred nesting habitat in western United States appears to be the cottonwood-willow river bottom. The paucity of this vegetative type in the Piceance Basin is probably the major limiting factor on the basin's red-eyed vireo population.
- Bobolink - The bobolink, an unusual species for this area, was recorded once during June. Since the habitat of the bobolink is limited rather strictly in the intermountain area to western pasturelands, its distribution in Colorado seems to be spotty and it has not previously been recorded in the Piceance Basin. Although little or no cultivated land is found within the study area, the observed bobolink was probably a wanderer from the agricultural lands along Piceance Creek.
- McCown's Longspur - This species was observed on Cathedral Bluffs in October and again in February. McCown's longspur is a local breeder in eastern Colorado but was not listed as occurring in western Colorado by either Davis (1969) or Bailey and Niedrach (1965).
- Chestnut-Collared Longspur - A single individual was recorded during a strip transect census through the upland meadow habitat during October, 1974, and two individuals were recorded within this transect during June, 1975. Bailey and Niedrach (1965) indicated this species is a local breeder in Weld County, eastern Colorado. They list only a single record of the chestnut-collared longspur for western Colorado.
- Snow Bunting - A flock of 32 snow buntings was observed on Cathedral Bluffs during February. A search of the literature on species recorded from western Colorado indicated that this sighting is probably the first record for this species in northwestern Colorado.

Figures and Tables for Avifauna Section

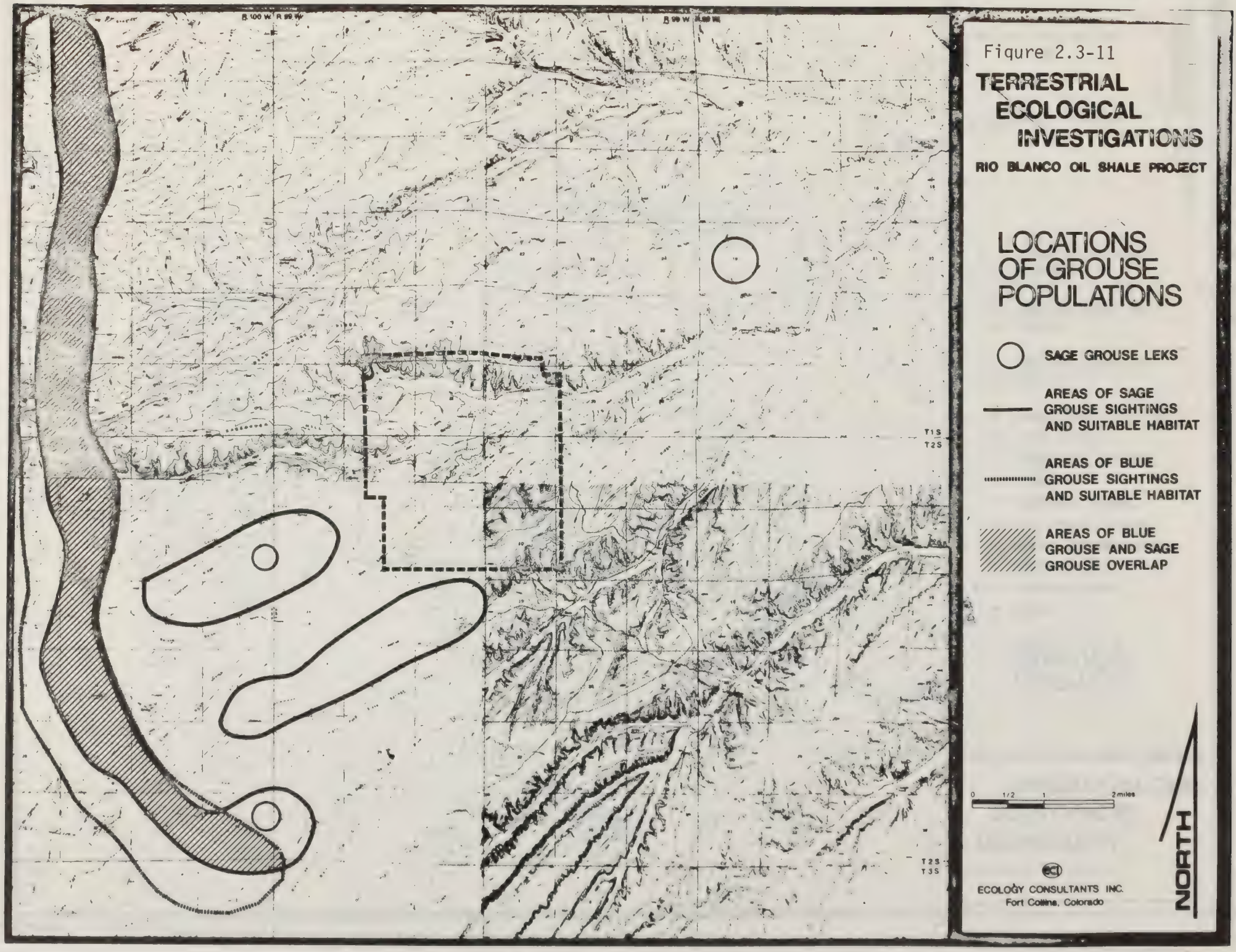
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Figure 2.3-11
TERRESTRIAL ECOLOGICAL INVESTIGATIONS
RIO BLANCO OIL SHALE PROJECT
LOCATIONS OF GROUSE POPULATIONS
SAGE GROUSE LEKS
AREAS OF SAGE GROUSE SIGHTINGS AND SUITABLE HABITAT
AREAS OF BLUE GROUSE SIGHTINGS AND SUITABLE HABITAT
AREAS OF BLUE GROUSE AND SAGE GROUSE OVERLAP
0 1/2 1 2 miles
NORTH
ECOLOGY CONSULTANTS INC.
Fort Collins, Colorado

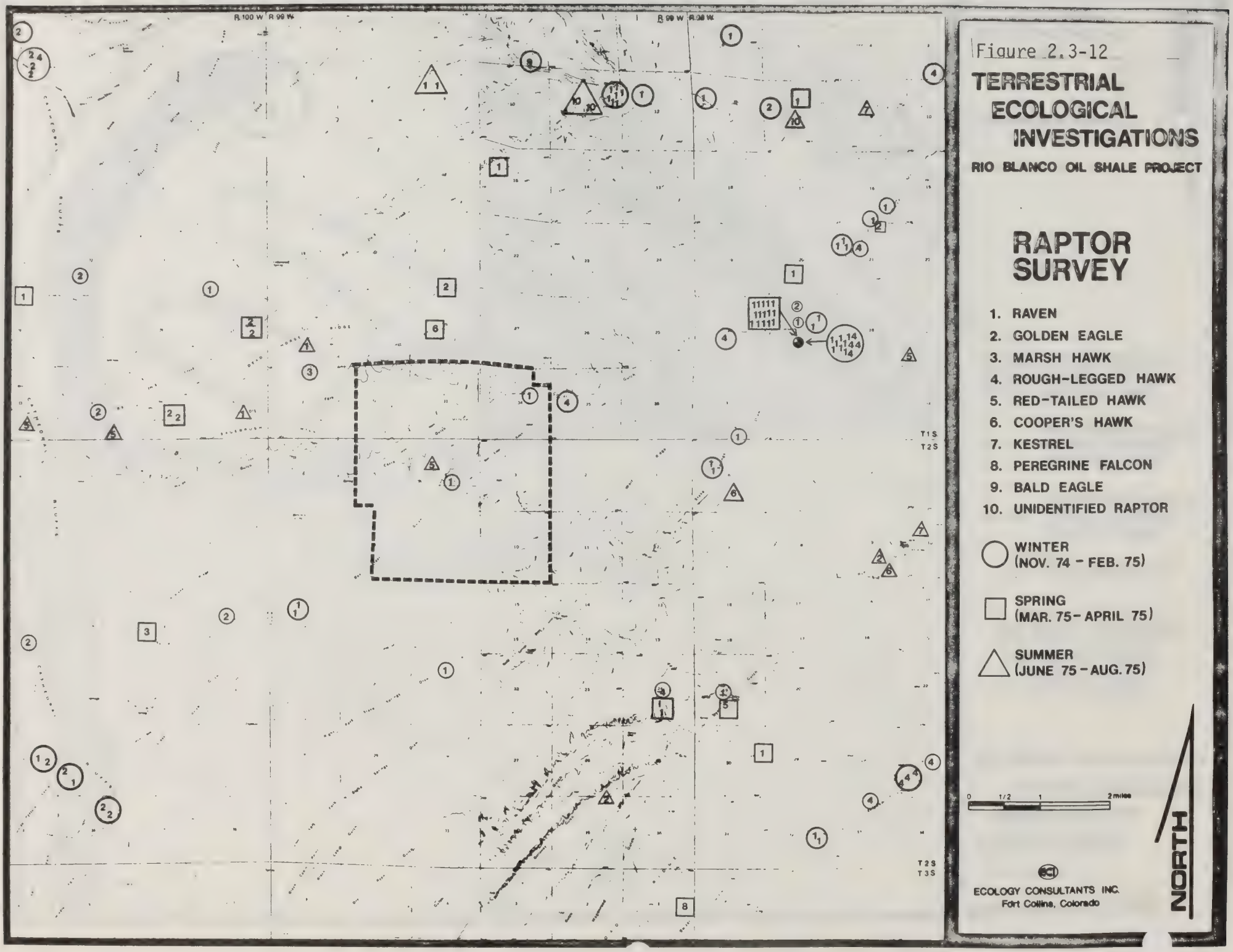

Figure 2.3-12

TERRESTRIAL ECOLOGICAL INVESTIGATIONS

RIO BLANCO OIL SHALE PROJECT

RAPTOR SURVEY

1. RAVEN
2. GOLDEN EAGLE
3. MARSH HAWK
4. ROUGH-LEGGED HAWK
5. RED-TAILED HAWK
6. COOPER'S HAWK
7. KESTREL
8. PEREGRINE FALCON
9. BALD EAGLE
10. UNIDENTIFIED RAPTOR

○ WINTER (NOV. 74 - FEB. 75)

□ SPRING (MAR. 75 - APRIL 75)

△ SUMMER (JUNE 75 - AUG. 75)

0 1/2 1 2 miles

NORTH

ECOLOGY CONSULTANTS INC.
Fort Collins, Colorado

Table 2.3-188 Results* of strip transect censuses of birds at transect 1 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
WESTERN WOOD PEWEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HORNED LARK	40	1.00	1.0	2.1	81.6	-	-	-	-	-	1	1.00	1.0	0.1	6.7
BARN SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VIOLET-GREEN SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TREE SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLACK-BILLED MAGPIE	1	1.00	1.0	0.1	2.0	2	1.00	1.0	0.1	40.0	6	1.00	1.0	0.3	40.0
COMMON RAVEN	-	-	-	-	-	3	1.00	1.0	0.2	60.0	4	1.00	1.0	0.2	26.7
ROBIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WATER PIPIT	1	0.13	1.0	0.4	16.3	-	-	-	-	-	-	-	-	-	-
YELLOW-HEADED BLACKBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BOBOLINK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WESTERN MEADOWLARK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RED-WINGED BLACKBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BREWER'S BLACKBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LARK BUNTING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LARK SPARROW	-	1	-	-	-	-	-	-	-	-	3	0.75	1.0	0.2	26.7
[illegible] SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHITE-CROWNED SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SONG SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				2.5					0.3					0.9	

* # = number of individuals tallied along transect
CD = coefficient of detectability
BD = [illegible] detectability adjustment
#/ha = [illegible]
%RA = [illegible]
- = [illegible]

Table 2.3-189 Results of strip transect censuses of birds at transect 1 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
WESTERN WOOD PEEWEE	1	0.13	1.0	0.4	32.0	-	-	-	-	-	-	-	-	-	-
HORNED LARK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BARN SWALLOW	-	-	-	-	-	2	1.00	1.0	0.1	1.3	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	4	1.00	1.0	0.2	2.7	-	-	-	-	-
VIOLET-GREEN SWALLOW	-	-	-	-	-	3	1.00	1.0	0.2	2.0	-	-	-	-	-
TREE SWALLOW	-	-	-	-	-	1	1.00	1.0	0.1	0.7	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	9	1.00	1.0	0.5	6.0	-	-	-	-	-
BLACK-BILLED MAGPIE	-	-	-	-	-	2	1.00	1.0	0.1	1.3	-	-	-	-	-
COMMON RAVEN	-	-	-	-	-	2	1.00	1.0	0.1	1.3	1	1.00	1.0	0.1	4.3
ROBIN	3	1.00	1.0	0.2	12.0	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	1	1.00	1.0	0.1	4.0	2	1.00	1.0	0.1	1.3	5	1.00	1.0	0.3	21.7
WATER PIPIT	-	-	-	-	-	1	0.13	1.0	0.4	5.3	-	-	-	-	-
YELLOW-RUMPED WARBLER	-	-	-	-	-	2	1.00	1.0	0.1	1.3	-	-	-	-	-
BOBOLINK	-	-	-	-	-	1	0.13	1.0	0.4	5.3	-	-	-	-	-
WESTERN MEADOWLARK	1	0.25	1.0	0.2	16.0	3	0.38	1.0	0.4	5.3	10	1.00	1.0	0.5	43.5
RED-WINGED BLACKBIRD	9	1.00	1.0	0.5	36.0	9	1.00	1.0	0.5	6.0	7	1.00	1.0	0.4	30.4
BREWER'S BLACKBIRD	-	-	-	-	-	18	1.00	1.0	0.9	12.0	-	-	-	-	-
LARK BUNTING	-	-	-	-	-	1	0.13	1.0	0.4	5.3	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	4	0.25	1.0	0.8	10.7	-	-	-	-	-
TREE SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	4	0.25	1.0	0.8	10.7	-	-	-	-	-
WHITE-CROWNED SPARROW	-	-	-	-	-	3	0.19	1.0	0.8	10.7	-	-	-	-	-
SONG SPARROW	-	-	-	-	-	4	0.25	1.0	0.8	10.7	-	-	-	-	-
TOTAL				1.3					7.7					1.2	

x See Table 2.3-188 for footnotes
- Species not observed during this sampling period

Table 2.3-190 Results of strip transect censuses of birds at transect 2 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
HORNED LARK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LARK BUNTING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LARK SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAGE SPARROW	2	0.13	1.2	1.0	100.0	-	-	-	-	-	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				1.0					0.0					0.0	

Table 2.3-191 Results of strip transect censuses of birds at transect 2 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
HORNED LARK	3	0.25	1.0	0.6	100.0	-	-	-	-	-	1	0.25	1.2	0.2	12.8
MOUNTAIN BLUEBIRD	-	-	-	-	-	-	-	-	-	-	9	0.32	1.0	1.4	74.5
LARK BUNTING	-	-	-	-	-	1	0.25	1.0	0.2	10.0	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	2	0.50	1.5	0.3	15.0	-	-	-	-	-
LARK SPARROW	-	-	-	-	-	1	0.06	1.0	0.8	40.0	-	-	-	-	-
SAGE SPARROW	-	-	-	-	-	-	-	-	-	-	1	0.25	1.2	0.2	12.8
BREWER'S SPARROW	-	-	-	-	-	7	0.50	1.0	0.7	35.0	-	-	-	-	-
TOTAL				0.6					2.1					1.9	

See Tab 1 2.3-188 for footnotes
- Species not observed during this sampling period

Table 2.3-192 Results of strip transect censuses of birds at transect 3 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
WHITE-THROATED SWIFT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	-	-	-	-	-	1	1.00	1.0	0.1	2.9
PINYON JAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN CHICKADEE	-	-	-	-	-	-	-	-	-	-	3	1.00	1.0	0.2	8.8
BUSHTIT	-	-	-	-	-	-	-	-	-	-	25	1.00	1.2	1.5	88.2
MOUNTAIN BLUEBIRD	7	0.15	1.0	2.5	33.3	-	-	-	-	-	-	-	-	-	-
RUBY-CROWNED KINGLET	2	0.13	1.0	0.8	11.1	-	-	-	-	-	-	-	-	-	-
YELLOW-RUMPED WARBLER	2	0.13	1.0	0.8	11.1	-	-	-	-	-	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RUFOUS-SIDED TOWHEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DARK-EYED JUNCO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRAY-HEADED JUNCO	13	0.41	1.0	1.6	22.2	-	-	-	-	-	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHITE-CROWNED SPARROW	8	0.25	1.0	1.6	22.2	-	-	-	-	-	-	-	-	-	-
GOLDEN-CROWNED SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				7.4					0.0					1.7	

Table 2.3-193 Results of strip transect censuses of birds at transect 3 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
WHITE-THROATED SWIFT	-	-	-	-	-	1	1.00	1.0	0.1	1.0	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	7	1.00	1.0	0.4	6.7	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	1	1.00	1.0	0.1	1.0	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	-	-	-	-	-	6	1.00	1.0	0.3	3.4
PINYON JAY	-	-	-	-	-	-	-	-	-	-	7	1.00	1.0	0.4	4.0
MOUNTAIN CHICKADEE	-	-	-	-	-	-	-	-	-	-	5	0.16	1.0	1.6	18.1
BUSHTIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	3	0.25	1.0	0.6	33.3	3	0.38	1.0	0.4	7.6	3	0.75	1.0	0.2	2.3
RUBY-CROWNED KINGLET	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YELLOW-RUMPED WARBLER	-	-	-	-	-	-	-	-	-	-	2	0.13	1.0	0.8	9.0
GREEN-TAILED TOWHEE	-	-	-	-	-	3	0.19	1.0	0.8	15.2	-	-	-	-	-
RUFOUS-SIDED TOWHEE	1	0.50	1.2	0.1	16.7	-	-	-	-	-	-	-	-	-	-
DARK-EYED JUNCO	-	-	-	-	-	-	-	-	-	-	2	0.13	1.0	0.8	9.0
GRAY-HEADED JUNCO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[illegible]	-	-	-	-	-	19	0.21	1.0	3.7	68.6	-	-	-	-	-
[illegible]	-	-	-	-	-	-	-	-	-	-	11	[illegible]	1.0	4.1	45.2
GOLDEN-CROWNED SPARROW	-	-	-	-	-	-	-	-	-	-	1	0.25	1.0	0.8	9.0
TOTAL				[illegible]					[illegible]					9.1	

See Table 2.3-188 for footnotes

- Species not observed during this sampling period

Table 2.3-194 Results of strip transect censuses of birds at transect 4 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
COMMON FLICKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PINYON JAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLACK-BILLED MAGPIE	1	1.00	1.0	0.1	11.1	-	-	-	-	-	-	-	-	-	-
MOUNTAIN CHICKADEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLUE-GRAY GNATCATCHER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RUFOUS-SIDED TOWHEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DARK-EYED JUNCO	1	0.13	1.0	0.4	88.9	-	-	-	-	-	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				0.5					0.0					0.0	

Table 2.3-195 Results of strip transect censuses of birds at transect 4 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
COMMON FLICKER	-	-	-	-	-	2	1.00	1.0	0.1	2.9	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	2	1.00	1.0	0.1	2.9	2	1.00	1.0	0.1	4.0
PINYON JAY	-	-	-	-	-	-	-	-	-	-	1	1.00	1.0	0.1	2.0
BLACK-BILLED MAGPIE	-	-	-	-	-	2	1.00	1.0	0.1	2.9	1	1.00	1.0	0.1	2.0
MOUNTAIN CHICKADEE	-	-	-	-	-	-	-	-	-	-	2	0.13	1.0	0.8	32.3
[illegible]	-	-	-	-	-	3	0.17	1.0	1.2	37.3	1	0.05	1.0	0.2	8.1
BLUE-GRAY GNATCATCHER	-	-	-	-	-	1	0.13	1.0	0.4	11.4	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	5	0.71	1.0	0.8	20.0	-	-	-	-	-
[illegible]	-	-	-	-	-	-	-	-	-	-	1	0.13	1.2	0.5	19.4
[illegible]	-	-	-	-	-	-	-	-	-	-	1	0.1	1.0	0.2	5.3
[illegible]	-	-	-	-	-	[illegible]		1.0	[illegible]	[illegible]	-	-	-	-	-
TOTAL				0.0					4.3					2.5	

* See Table 2.3-188 for footnotes

\- Species not observed during this sampling period

Table 2.3-196 Results of strip transect censuses of birds at transect 5 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
WHITE-THROATED SWIFT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BROAD-TAILED HUMMINGBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLACK-BILLED MAGPIE	-	-	-	-	-	18	1.00	1.0	0.9	90.0	-	-	-	-	-
COMMON RAVEN	-	-	-	-	-	2	1.00	1.0	0.1	10.0	-	-	-	-	-
MOUNTAIN CHICKADEE	2	0.25	1.0	0.4	33.3	-	-	-	-	-	-	-	-	-	-
HOUSE WREN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ROBIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLUE-GRAY GNATCATCHER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NORTHERN SHRIKE	-	-	-	-	-	-	-	-	-	-	1	1.00	1.0	0.1	100.0
GREEN-TAILED TOWHEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DARK-EYED JUNCO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRAY-HEADED JUNCO	5	0.31	1.0	0.8	66.7	-	-	-	-	-	-	-	-	-	-
TOTAL				1.2					1.0					0.1	

Table 2.3-197 Results* of strip transect censuses of birds at transect 5 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
WHITE-THROATED SWIFT	-	-	-	-	-	1	1.00	1.0	0.1	1.8	-	-	-	-	-
BROAD-TAILED HUMMINGBIRD	-	-	-	-	-	2	0.25	1.5	0.6	21.4	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	-	-	-	-	-	2	1.00	1.0	0.1	3.0
BLACK-BILLED MAGPIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMMON RAVEN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN CHICKADEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HOUSE WREN	-	-	-	-	-	3	1.00	1.0	0.2	5.4	-	-	-	-	-
ROBIN	-	-	-	-	-	-	-	-	-	-	1	0.25	1.0	0.2	6.1
MOUNTAIN BLUEBIRD	-	-	-	-	-	-	-	-	-	-	8	0.40	1.0	1.0	30.3
BLUE-GRAY GNATCATCHER	-	-	-	-	-	2	0.06	1.0	1.6	57.1	-	-	-	-	-
NORTHERN SHRIKE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	3	0.38	1.0	0.4	14.3	-	-	-	-	-
DARK-EYED JUNCO	-	-	-	-	-	-	-	-	-	-	5	0.13	1.0	2.1	60.6
GRAY-HEADED JUNCO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				0.0					2.9					3.4	

* See Table 2.3-188 for footnotes

\- Species not observed during this sampling period

Table 2.3-198 Results of strip transect censuses of birds at transect 6 during October, December 1974, and February 1975 for RBOSP *

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
BROAD-TAILED HUMMINGBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HORNED LARK	70	0.29	1.0	12.3	93.4	-	-	-	-	-	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TREE SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCRUB JAY	1	1.00	1.0	0.1	0.4	-	-	-	-	-	-	-	-	-	-
PINYON JAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CLARK'S NUTCRACKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMMON RAVEN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN CHICKADEE	1	0.25	1.0	0.2	1.6	3	0.38	1.0	0.4	100.0	-	-	-	-	-
BUSHTIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	6	0.50	1.0	0.6	4.7	-	-	-	-	-	-	-	-	-	-
BLUE-GRAY GNATCATCHER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RUFOUS-SIDED TOWHEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LARK SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAGE SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				13.2					0.4					0.0	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period

Table 2.3-199 Results* of strip transect censuses of birds at transect 6 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha.	%RA	June 1975 #	CD	BD	#/ha.	%RA	Oct. 1975 #	CD	BD	#/ha.	%RA
BROAD-TAILED HUMMINGBIRD	-	-	-	-	-	1	0.25	1.5	0.3	4.2	-	-	-	-	-
HORNED LARK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	8	1.00	1.0	0.4	5.6	-	-	-	-	-
TREE SWALLOW	-	-	-	-	-	3	1.00	1.0	0.2	2.1	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	2	1.00	1.0	0.1	1.4	3	1.00	1.0	0.2	3.3
PINYON JAY	-	-	-	-	-	-	-	-	-	-	1	1.00	1.0	0.1	1.1
CLARK'S NUTCRACKER	-	-	-	-	-	-	-	-	-	-	2	1.00	1.0	0.1	2.2
COMMON RAVEN	-	-	-	-	-	1	1.00	1.0	0.1	0.7	-	-	-	-	-
MOUNTAIN CHICKADEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BUSHTIT	-	-	-	-	-	-	-	-	-	-	4	0.13	1.2	2.0	42.9
MOUNTAIN BLUEBIRD	-	-	-	-	-	6	0.25	1.0	1.2	16.7	1	0.50	1.0	0.1	2.2
BLUE-GRAY GNATCATCHER	-	-	-	-	-	3	0.13	1.0	1.2	16.7	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	3	0.19	1.0	0.8	11.1	-	-	-	-	-
RUFOUS-SIDED TOWHEE	-	-	-	-	-	-	-	-	-	-	3	0.13	1.2	1.5	32.1
VESPER SPARROW	-	-	-	-	-	4	0.33	1.0	0.6	8.3	-	-	-	-	-
LARK SPARROW	-	-	-	-	-	2	0.13	1.0	0.8	11.1	-	-	-	-	-
SAGE SPARROW	-	-	-	-	-	-	-	-	-	-	3	0.25	1.2	0.7	16.1
BREWER'S SPARROW	-	-	-	-	-	10	0.31	1.0	1.6	22.2	-	-	-	-	-
TOTAL				0.0					7.4					4.6	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period

Table 2.3-200 Results of strip transect censuses of birds at transect 7 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
HORNED LARK	4	0.25	1.0	0.8	40.0	+	+	+	+	+	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
WHITE-CROWNED SPARROW	2	0.13	1.0	0.8	40.0	+	+	+	+	+	-	-	-	-	-
CHESTNUT-COLLARED LONGSPUR	1	0.13	1.0	0.4	20.0	+	+	+	+	+	-	-	-	-	-
TOTAL				2.1										0.0	

Table 2.3-201 Results of strip transect censuses of birds at transect 7 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
HORNED LARK	3	1.00	1.0	0.2	100.0	9	1.00	1.0	0.5	14.3	23	0.25	1.0	4.7	100.0
MOUNTAIN BLUEBIRD	-	-	-	-	-	2	1.00	1.0	0.1	3.2	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	1	0.25	1.0	0.2	6.3	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	3	0.19	1.0	0.8	25.4	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	2	0.13	1.0	0.8	25.4	-	-	-	-	-
WHITE-CROWNED SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CHESTNUT-COLLARED LONGSPUR	-	-	-	-	-	2	0.13	1.0	0.8	25.4	-	-	-	-	-
TOTAL				.2					.5					4.7	

* See Table 2.3-188 for footnotes

\- Species not observed during this sampling period

Table 2.3-202. Results* of strip transect censuses of birds at transect 8 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
MOURNING DOVE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMMON FLICKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	1	1.00	1.0	0.1	100.0	-	-	-	-	-
PINYON JAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CLARK'S NUTCRACKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMMON RAVEN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAGE THRASHER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YELLOW-RUMPED WARBLER	5	0.31	1.0	0.8	54.1	-	-	-	-	-	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LARK SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DARK-EYED JUNCO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRAY-HEADED JUNCO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TREE SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CHIPPING SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHITE-CROWNED SPARROW	1	0.25	1.0	0.2	13.5	-	-	-	-	-	-	-	-	-	-
SONG SPARROW	1	0.13	1.2	0.5	32.4	-	-	-	-	-	-	-	-	-	-
TOTAL				1.5					0.1					0.0	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period

Table 2.3-203 Results* of strip transect censuses of birds at transect 8 during April, June and October 1975 for RBOSF

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
MOURNING DOVE	-	-	-	-	-	3	1.00	1.0	0.2	1.5	-	-	-	-	-
COMMON FLICKER	-	-	-	-	-	-	-	-	-	-	2	1.00	1.0	0.1	1.5
CLIFF SWALLOW	-	-	-	-	-	2	1.00	1.0	0.1	1.0	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	3	1.00	1.0	0.2	1.5	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	1	1.00	1.0	0.1	0.5	2	1.00	1.0	0.1	1.5
PINYON JAY	-	-	-	-	-	-	-	-	-	-	7	1.00	1.0	0.4	5.2
CLARK'S NUTCRACKER	-	-	-	-	-	-	-	-	-	-	1	1.00	1.0	0.1	0.7
COMMON RAVEN	-	-	-	-	-	1	1.00	1.0	0.1	0.5	2	1.00	1.0	0.1	1.5
SAGE THRASHER	3	0.38	1.0	0.4	2.7	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	4	0.17	1.0	1.2	8.1	-	-	-	-	-	7	0.18	1.0	2.1	29.5
YELLOW-RUMPED WARBLER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	4	0.17	1.0	1.2	12.2	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	1	0.25	1.5	0.3	3.1	3	0.19	1.2	1.0	14.2
LARK SPARROW	-	-	-	-	-	2	0.50	1.0	0.2	2.0	-	-	-	-	-
DARK-EYED JUNCO	22	0.15	1.0	7.4	48.6	-	-	-	-	-	-	-	-	-	-
GRAY-HEADED JUNCO	22	0.18	1.0	6.2	40.5	-	-	-	-	-	-	-	-	-	-
TREE SPARROW	-	-	-	-	-	-	-	-	-	-	2	0.13	1.0	0.8	11.3
CHIPPING SPARROW	-	-	-	-	-	2	0.06	1.5	2.5	24.5	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	21	0.25	1.0	4.1	40.8	2	0.06	1.2	2.0	28.3
WHITE-CROWNED SPARROW	-	-	-	-	-	-	-	-	-	-	1	0.13	1.0	0.4	5.9
SONG SPARROW	-	-	-	-	-	3	0.19	1.5	1.2	12.2	-	-	-	-	-
TOTAL				15.2					10.0					6.9	

* See Table 2.3-188 for footnotes

\- Species not observed during this sampling period

Table 2.3-204 Results of strip transect censuses of birds at transect 9 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
MOURNING DOVE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHITE-THROATED SWIFT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMMON FLICKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TREE SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCRUB JAY	1	1.00	1.0	0.1	20.0	-	-	-	-	-	-	-	-	-	-
PINYON JAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMMON RAVEN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN CHICKADEE	1	0.25	1.0	0.2	80.0	-	-	-	-	-	-	-	-	-	-
BUSHTIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRAY VIREO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOLITARY VIREO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLACK-THROATED GREEN WARBLER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				0.3					0.0					0.0	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period

Table 2.3-205 Results of strip transect censuses of birds at transect 9 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
MOURNING DOVE	-	-	-	-	-	7	1.00	1.0	0.4	5.5	-	-	-	-	-
WHITE-THROATED SWIFT	-	-	-	-	-	2	1.00	1.0	0.1	1.6	-	-	-	-	-
COMMON FLICKER	-	-	-	-	-	2	1.00	1.0	0.1	1.6	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	6	1.00	1.0	0.3	4.7	-	-	-	-	-
TREE SWALLOW	-	-	-	-	-	2	1.00	1.0	0.1	1.6	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	1	1.00	1.0	0.1	0.8	-	-	-	-	-
SCRUB JAY	1	1.00	1.0	0.1	6.7	4	1.00	1.0	0.3	3.1	4	1.00	1.0	0.2	11.1
PINYON JAY	13	1.00	1.0	0.7	86.7	-	-	-	-	-	-	-	-	-	-
COMMON RAVEN	1	1.00	1.0	0.1	6.7	-	-	-	-	-	-	-	-	-	-
MOUNTAIN CHICKADEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BUSHTIT	-	-	-	-	-	2	0.13	1.5	1.2	18.8	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	4	0.13	1.0	1.6	25.0	7	0.22	1.0	1.6	88.9
GRAY VIREO	-	-	-	-	-	2	0.15	1.0	0.8	12.5	-	-	-	-	-
SOLITARY VIREO	-	-	-	-	-	2	0.13	1.0	0.8	12.5	-	-	-	-	-
BLACK-THROATED GREEN WARBLER	-	-	-	-	-	1	0.13	1.0	0.4	12.5	-	-	-	-	-
TOTAL														1.8	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period

Table 2.3-206 Results of strip transect censuses of birds at transect 10 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	DD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
BROAD-TAILED HUMMINGBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMMON FLICKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRAY FLYCATCHER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	5	1.00	1.0	0.3	100.0	2	1.00	1.0	0.1	2.0
BLACK-BILLED MAGPIE	1	1.00	1.0	0.1	2.3	-	-	-	-	-	-	-	-	-	-
CLARK'S NUTCRACKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN CHICKADEE	4	0.17	1.0	1.2	54.3	-	-	-	-	-	9	0.19	1.0	2.5	49.0
PLAIN TITMOUSE	-	-	-	-	-	-	-	-	-	-	4	0.17	1.0	1.2	24.5
WHITE-BREASTED NUTHATCH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RED-BREASTED NUTHATCH	-	-	-	-	-	-	-	-	-	-	10	0.42	1.0	1.2	24.5
ROBIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ASH-GROUND SISKIN	1	0.03	1.2	1.0	43.1	-	-	-	-	-	-	-	-	-	-
SOLITARY VIREO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLACK-THROATED GREEN WARBLER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BROWN-HEADED COWBIRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRASSHOPPER SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DARK-EYED JUNCO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRAY-HEADED JUNCO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CHIPPING SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				2.3					0.3					5.0	

See Table 2.3-188 for footnotes
- Species not observed during this sampling period

Table 2.3-208 Results of strip transect censuses of birds at transect 11 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	DD	#/ha	%RA	Dec. 1974 #	CD	DD	#/ha	%RA	Feb. 1975 #	CD	DD	#/ha	%RA
COMMON FLICKER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
CLARK'S NUTCRACKER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
COMMON RAVEN	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
HOUSE WREN	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
ROBIN	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
YELLOW-RUMPED WARBLER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
TOTAL				0.0										0.0	

Table 2.3-209 Results of strip transect censuses of birds at transect 11 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	DD	#/ha	%RA	June 1975 #	CD	DD	#/ha	%RA	Oct. 1975 #	CD	DD	#/ha	%RA
COMMON FLICKER	-	-	-	-	-	1	1.00	1.0	0.1	1.1	2	1.00	1.0	0.1	1.6
SCRUB JAY	-	-	-	-	-	-	-	-	-	-	1	1.00	1.0	0.1	0.8
CLARK'S NUTCRACKER	-	-	-	-	-	-	-	-	-	-	1	1.00	1.0	0.1	0.8
COMMON RAVEN	-	-	-	-	-	-	-	-	-	-	1	1.00	1.0	0.1	0.8
HOUSE WREN	-	-	-	-	-	1	0.50	1.0	0.1	2.2	-	-	-	-	-
ROBIN	-	-	-	-	-	-	-	-	-	-	4	1.00	1.0	0.2	3.2
MOUNTAIN BLUEBIRD	-	-	-	-	-	2	1.00	1.0	0.1	2.2	8	0.25	1.0	1.6	25.8
YELLOW-RUMPED WARBLER	-	-	-	-	-	-	-	-	-	-	7	0.11	1.0	3.3	51.6
GREEN-TAILED TOWHEE	-	-	-	-	-	9	0.38	1.0	1.2	25.8	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	4	0.25	1.5	1.2	25.8	2	0.13	1.2	1.0	15.5
BREWER'S SPARROW	-	-	-	-	-	17	0.43	1.0	2.1	43.0	-	-	-	-	-
TOTAL				0.0					4.8					6.4	

* See Page 2.3-188 for footnotes
- Species not observed during this sampling period

Table 2.3-210 Results of strip transect censuses of birds at transect 12 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
COMMON FLICKER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
STELLER'S JAY	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
CLARK'S NUTCRACKER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
COMMON RAVEN	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
MOUNTAIN BLUEBIRD	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
MACGILLIVRAY'S WARBLER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
BLACK ROSY FINCH	-	-	-	-	-	+	+	+	+	+	13	0.25	1.0	2.7	36.1
BROWN-CAPPED ROSY FINCH	-	-	-	-	-	+	+	+	+	+	7	0.25	1.0	1.4	19.4
GRAY-TAILED TOWHEE	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
DARK-EYED JUNCO	20	0.13	1.0	8.2	33.3	+	+	+	+	+	-	-	-	-	-
GRAY-HEADED JUNCO	40	0.13	1.0	16.4	66.7	+	+	+	+	+	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
SNOW BUNTING	-	-	-	-	-	+	+	+	+	+	32	0.50	1.0	3.3	44.4
TOTAL				24.6										7.4	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period
\+ Transect not sampled due to adverse weather conditions

Table 2.3-211 Results of strip transect censuses of birds at transect 12 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
COMMON FLICKER	-	-	-	-	-	2	1.00	1.0	0.1	1.3	-	-	-	-	-
STELLER'S JAY	-	-	-	-	-	1	1.00	1.0	0.1	0.6	-	-	-	-	-
CLARK'S NUTCRACKER	-	-	-	-	-	-	-	-	-	-	2	1.00	1.0	0.1	2.0
COMMON RAVEN	-	-	-	-	-	1	1.00	1.0	0.1	0.6	-	-	-	-	-
MOUNTAIN BLUEBIRD	2	0.25	1.0	0.1	11.1	-	-	-	-	-	7	0.07	1.0	4.9	98.0
MACGILLIVRAY'S WARBLER	-	-	-	-	-	2	0.06	1.0	1.6	20.5	-	-	-	-	-
BLACK ROSY FINCH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BROWN-CAPPED ROSY FINCH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRAY-TAILED TOWHEE	-	-	-	-	-	4	0.13	1.0	1.6	20.5	-	-	-	-	-
VESPER SPARROW	-	-	-	-	-	5	0.16	1.5	2.5	30.8	-	-	-	-	-
DARK-EYED JUNCO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRAY-HEADED JUNCO	10	0.16	1.0	6.3	88.9	-	-	-	-	-	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	8	0.25	1.0	3.1	21.5	-	-	-	-	-
SNOW BUNTING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL				.7					2.0					5.0	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period

Table 2.3-212 Results of strip transect censuses of birds at transect 13 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974					Dec. 1974					Feb. 1975				
	#	CD	BD	#/ha	%RA	#	CD	BD	#/ha	%RA	#	CD	BD	#/ha	%RA
DOWNY WOODPECKER	1	1.00	1.0	0.1	1.4	+	+	+	+	+	-	-	-	-	-
HAIRY WOODPECKER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
STELLER'S JAY	-	-	-	-	-	+	+	+	+	+	3	0.50	1.0	0.3	1.8
CLARK'S NUTCRACKER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
COMMON RAVEN	1	1.00	1.0	0.1	1.4	+	+	+	+	+	-	-	-	-	-
BLACK-CAPPED CHICKADEE	-	-	-	-	-	+	+	+	+	+	16	0.29	1.0	2.9	16.9
MOUNTAIN CHICKADEE	-	-	-	-	-	+	+	+	+	+	34	0.28	1.0	6.2	36.3
RED-BREASTED NUTHATCH	-	-	-	-	-	+	+	+	+	+	10	0.16	1.0	6.2	36.3
PYGMY NUTHATCH	-	-	-	-	-	+	+	+	+	+	3	0.13	1.2	1.5	8.7
HOUSE WREN	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
ROBIN	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
HERMIT THRUSH	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
RUBY-CROWNED KINGLET	3	0.25	1.2	0.7	10.9	+	+	+	+	+	-	-	-	-	-
CASSIN'S FINCH	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
PINE SISKIN	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
RED CROSSBILL	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
DARK-EYED JUNCO	3	0.19	1.0	0.8	27.1	+	+	+	+	+	-	-	-	-	-
GRAY-HEADED JUNCO	13	0.05	1.0	2.1	55.1	+	+	+	+	+	-	-	-	-	-
TOTAL				5.7										17.0	

* See Table 2.3-188 for footnotes

\- Species not observed during this sampling period

\+ Transect not sampled due to adverse weather conditions

Table 2.3-215 Results* of strip transect censuses of birds at transect 14 during April, June and October 1975 for RBOSP

Species	Apr. 1975 #	CD	BD	#/ha.	%RA	June 1975 #	CD	BD	#/ha.	%RA	Oct. 1975 #	CD	BD	#/ha.	%RA
GREAT HORNED OWL	-	-	-	-	-	1	1.00	1.0	0.1	0.4	-	-	-	-	-
WHITE-THROATED SWIFT	-	-	-	-	-	2	1.00	1.0	0.1	0.7	-	-	-	-	-
BROAD-TAILED HUMMINGBIRD	-	-	-	-	-	3	0.09	1.5	2.5	17.8	-	-	-	-	-
COMMON FLICKER	1	1.00	1.0	0.1	0.8	2	1.00	1.0	0.1	0.7	-	-	-	-	-
DOWNY WOODPECKER	1	1.00	1.0	0.1	0.8	1	1.00	1.0	0.1	0.4	-	-	-	-	-
CLARK'S NUTCRACKER	-	-	-	-	-	-	-	-	-	-	1	1.00	1.0	0.1	2.0
COMMON RAVEN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLACK-CAPPED CHICKADEE	3	0.13	1.0	1.2	20.3	3	0.19	1.0	0.8	5.9	-	-	-	-	-
MOUNTAIN CHICKADEE	14	0.25	1.0	2.9	47.5	2	0.06	1.0	1.6	11.9	4	0.50	1.0	0.4	16.3
HOUSE WREN	-	-	-	-	-	1	0.25	1.0	0.2	1.5	-	-	-	-	-
TOWNSEND'S SOLITAIRE	-	-	-	-	-	-	-	-	-	-	2	0.25	1.0	0.4	16.3
RUBY-CROWNED KINGLET	-	-	-	-	-	3	0.09	1.5	2.5	17.8	-	-	-	-	-
WARBLING VIREO	-	-	-	-	-	5	0.21	1.0	1.2	8.9	-	-	-	-	-
TENNESSEE WARBLER	-	-	-	-	-	3	0.19	1.0	0.8	5.9	-	-	-	-	-
ORANGE-CROWNED WARBLER	-	-	-	-	-	1	0.06	1.5	1.2	8.9	-	-	-	-	-
MACGILLIVRAY'S WARBLER	-	-	-	-	-	1	0.06	1.0	0.8	5.9	-	-	-	-	-
BLACK-HEADED GROSBEAK	-	-	-	-	-	2	0.13	1.0	0.8	5.9	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	1	0.13	1.0	0.4	5.0	-	-	-	-	-
RUFOUS-SIDED TOWHEE	-	-	-	-	-	1	0.13	1.5	0.6	4.4	-	-	-	-	-
DARK-EYED JUNCO	3	0.25	1.0	0.6	10.2	-	-	-	-	-	-	-	-	-	-
GRAY-HEADED JUNCO	12	0.50	1.0	1.2	20.3	-	-	-	-	-	4	0.13	1.0	1.6	65.3
TOTAL				6.0					13.8					2.5	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period

Table 2.3-216 Results* of strip transect censuses of birds at transect 15 during October, December 1974, and February 1975 for RBOSP

Species	Oct. 1974 #	CD	BD	#/ha	%RA	Dec. 1974 #	CD	BD	#/ha	%RA	Feb. 1975 #	CD	BD	#/ha	%RA
MOURNING DOVE	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
BROAD-TAILED HUMMINGBIRD	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
WESTERN WOOD PEWEE	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
SCRUB JAY	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
BLACK-BILLED MAGPIE	1	1.00	1.0	0.1	0.5	+	+	+	+	+	-	-	-	-	-
COMMON RAVEN	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
MOUNTAIN CHICKADEE	3	0.13	1.0	1.2	10.9	+	+	+	+	+	-	-	-	-	-
ROBIN	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
MOUNTAIN BLUEBIRD	20	0.67	1.0	1.5	13.7	+	+	+	+	+	-	-	-	-	-
BLUE-GRAY GNATCATCHER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
WATER PIPIT	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
STARLING	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
ORANGE-CROWNED WARBLER	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
YELLOW-RUMPED WARBLER	30	0.21	1.0	7.4	65.6	+	+	+	+	+	-	-	-	-	-
WESTERN MEADOWLARK	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
RED-WINGED BLACKBIRD	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
BREWER'S BLACKBIRD	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
CASSIN'S FINCH	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
DARK-EYED JUNCO	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
GRAY-HEADED JUNCO	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-
WHITE-CROWNED SPARROW	3	1.00	1.0	0.2	1.4	+	+	+	+	+	-	-	-	-	-
FOX SPARROW	1	0.13	1.0	0.4	3.6	+	+	+	+	+	-	-	-	-	-
SONG SPARROW	1	0.13	1.2	0.5	4.4	+	+	+	+	+	-	-	-	-	-
TOTAL				11.3										0.0	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period
\+ Transect not sampled due to adverse weather conditions

Table 2.3-217 Results of strip transect censuses of birds at transect 15 during April, June and October 1975 for RDOST

Species	Apr. 1975 #	CD	BD	#/ha	%RA	June 1975 #	CD	BD	#/ha	%RA	Oct. 1975 #	CD	BD	#/ha	%RA
MOURNING DOVE	-	-	-	-	-	4	1.00	1.0	0.2	0.7	-	-	-	-	-
BROAD-TAILED HUMMINGBIRD	-	-	-	-	-	1	0.06	1.5	1.2	4.2	-	-	-	-	-
WESTERN WOOD PEWEE	1	0.50	1.0	0.1	0.4	-	-	-	-	-	-	-	-	-	-
CLIFF SWALLOW	-	-	-	-	-	20	1.00	1.0	1.0	3.5	-	-	-	-	-
ROUGH-WINGED SWALLOW	-	-	-	-	-	1	1.00	1.0	0.1	0.2	-	-	-	-	-
SCRUB JAY	2	1.00	1.0	0.1	0.4	-	-	-	-	-	1	1.00	1.0	0.1	0.5
BLACK-BILLED MAGPIE	2	1.00	1.0	0.1	0.4	-	-	-	-	-	-	-	-	-	-
COMMON RAVEN	4	1.00	1.0	0.2	0.9	-	-	-	-	-	-	-	-	-	-
MOUNTAIN CHICKADEE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ROBIN	7	0.29	1.0	1.2	5.3	7	0.22	1.0	1.6	5.6	-	-	-	-	-
MOUNTAIN BLUEBIRD	13	0.20	1.0	3.3	14.0	-	-	-	-	-	2	1.00	1.0	0.1	1.0
BLUE-GRAY GNATCATCHER	-	-	-	-	-	5	0.25	1.0	1.0	3.5	-	-	-	-	-
WATER PIPIT	3	1.00	1.0	0.2	0.7	-	-	-	-	-	-	-	-	-	-
STARLING	3	1.00	1.0	0.2	0.7	-	-	-	-	-	-	-	-	-	-
ORANGE-CROWNED WARBLER	-	-	-	-	-	1	0.13	1.5	0.6	2.1	-	-	-	-	-
YELLOW-RUMPED WARBLER	-	-	-	-	-	1	0.25	1.0	0.2	0.7	15	0.10	1.0	7.4	70.2
WESTERN MEADOWLARK	2	0.50	1.0	0.2	0.9	-	-	-	-	-	-	-	-	-	-
RED-WINGED BLACKBIRD	13	0.27	1.2	3.0	12.6	26	0.20	1.5	9.8	35.3	2	1.00	1.0	0.1	1.0
BREWER'S BLACKBIRD	-	-	-	-	-	3	1.00	1.0	0.2	0.5	-	-	-	-	-
CASSIN'S FINCH	-	-	-	-	-	2	0.06	1.0	1.5	5.6	-	-	-	-	-
GREEN-TAILED TOWHEE	-	-	-	-	-	3	0.31	1.0	0.8	2.8	-	-	-	-	-
DARK-EYED JUNCO	10	0.10	1.0	4.9	21.1	-	-	-	-	-	1	0.13	1.0	0.4	3.9
GRAY-HEADED JUNCO	25	0.10	1.0	9.8	42.1	-	-	-	-	-	-	-	-	-	-
BREWER'S SPARROW	-	-	-	-	-	24	0.25	1.0	4.9	16.7	-	-	-	-	-
WHITE-CROWNED SPARROW	-	-	-	-	-	-	-	-	-	-	3	0.06	1.0	2.5	23.4
FOX SPARROW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SONG SPARROW	1	0.50	1.2	0.1	0.5	9	0.11	1.5	3.0	20.3	-	-	-	-	-
TOTAL				23.4					29.5					10.5	

* See Table 2.3-188 for footnotes
\- Species not observed during this sampling period

Table 2.3-218 Shannon-Weiner diversity indices (H'), unbiased estimates of H' (E(H')), variance of H' (var (H')), maximum expected value of H' (H'(max)), and equitability (J) for all avifauna transects during sample period 1, October 1974, for RBOSP

Transect Number	Vegetation Type	H'	E(H')	var(H')	H'(max)	J
1	Bottomland meadow	0.628	0.598	0.016	1.386	0.453
2	Sagebrush	0.000	0.000	0.000	0.000	-
3	Rabbitbrush	1.523	1.509	0.001	1.609	0.946
4	Pinyon-juniper/mixed brush	0.349	0.293	0.047	0.693	0.503
5	Mixed brush	0.637	0.616	0.004	0.693	0.918
6	Pinyon-juniper/sagebrush	0.293	0.288	0.003	1.386	0.212
7	Upland meadow	1.055	1.030	0.002	1.099	0.960
8	Greasewood-sagebrush	0.647	0.646	0.000	1.792	0.361
9	Pinyon-juniper (south slope)	0.868	0.701	0.071	1.099	0.790
10	Pinyon-juniper (north slope)	0.780	0.757	0.005	1.099	0.710
11	Sagebrush	0.000	-	-	-	-
12	Mixed brush	0.637	0.635	0.000	0.693	0.918
13	Douglas fir	1.101	1.073	0.007	1.609	0.684
14	Aspen	1.342	1.319	0.004	1.609	0.834
15	Riparian	1.155	1.139	0.005	2.079	0.556

- Insufficient data for computation

Table 2.3-219 Shannon-Weiner diversity indices (H'), unbiased estimates of H' (E(H')), variance of H' (var (H')), maximum expected value of H' (H'(max)), and equitability (J) for all avifauna transects during sample period 2, December 1974, for RBOSP

Transect Number	Vegetation Type	H'	E(H')	var(H')	H'(max)	J
1	Bottomland meadow	1.277	1.063	0.030	1.386	0.921
2	Sagebrush	0.000	-	-	-	-
3	Rabbitbrush	0.000	-	-	-	-
4	Pinyon-juniper/mixed brush	0.000	-	-	-	-
5	Mixed brush	0.325	0.300	0.022	0.693	0.469
6	Pinyon-juniper/sagebrush	0.000	0.000	0.000	0.000	-
7	Upland meadow	*	*	*	*	*
8	Greasewood-sagebrush	0.000	0.000	0.000	0.000	-
9	Pinyon-juniper (south slope)	0.000	0.000	0.000	0.000	-
10	Pinyon-juniper (north slope)	0.451	0.367	0.060	0.693	0.650
11	Sagebrush	*	*	*	*	*
12	Mixed brush	*	*	*	*	*
13	Douglas fir	*	*	*	*	*
14	Aspen	*	*	*	*	*
15	Riparian	*	*	*	*	*

- Insufficient data for computation
* Transect not sampled due to adverse weather conditions

Table 2.3-220 Shannon-Weiner diversity indices (H'), unbiased estimates of H' (E(H')), variance of H' (var (H')), maximum expected value of H' (H'(max)), and equitability (J) for all avifauna transects during sample period 3, February 1975, for RBOSP

Transect Number	Vegetation Type	H'	E(H')	var(H')	H'(max)	J
1	Bottomland meadow	1.739	1.589	0.017	1.946	0.894
2	Sagebrush	0.000	-	-	-	-
3	Rabbitbrush	0.428	0.399	0.021	1.099	0.390
4	Pinyon-juniper/mixed brush	0.000	-	-	-	-
5	Mixed brush	0.000	0.000	0.000	0.000	-
6	Pinyon-juniper/sagebrush	0.000	-	-	-	-
7	Upland meadow	0.000	-	-	-	-
8	Greasewood-sagebrush	0.000	-	-	-	-
9	Pinyon-juniper (south slope)	0.000	-	-	-	-
10	Pinyon-juniper (north slope)	1.118	1.103	0.003	1.386	0.807
11	Sagebrush	0.000	-	-	-	-
12	Mixed brush	1.047	1.040	0.001	1.099	0.953
13	Douglas fir	1.322	1.316	0.001	1.609	0.821
14	Aspen	0.224	0.194	0.025	0.693	0.323
15	Riparian	0.000	0.000	0.000	0.000	-

- Insufficient data for computation

Table 2.3-221 Shannon-Weiner diversity indices (H'), unbiased estimates of H' (E(H')), variance of H' (var (H')), maximum expected value of H' (H'(max)), and equitability (J) for all avifauna transects during sample period 4, April 1975, for RBOSP

Transect Number	Vegetation Type	H'	E(H')	var(H')	H'(max)	J
1	Bottomland meadow	1.621	1.545	0.007	1.792	0.905
2	Sagebrush	0.000	0.000	0.000	0.000	-
3	Rabbitbrush	0.451	0.416	0.025	0.693	0.650
4	Pinyon-juniper/mixed brush	0.000	-	-	-	-
5	Mixed brush	0.000	-	-	-	-
6	Pinyon-juniper/sagebrush	0.000	-	-	-	-
7	Upland meadow	0.000	0.000	0.000	0.000	-
8	Greasewood-sagebrush	1.018	1.013	0.001	1.386	0.734
9	Pinyon-juniper (south slope)	0.689	0.595	0.063	1.386	0.497
10	Pinyon-juniper (north slope)	0.000	-	-	-	-
11	Sagebrush	0.000	-	-	-	-
12	Mixed brush	0.349	0.342	0.006	0.693	0.503
13	Douglas fir	1.131	1.114	0.004	1.386	0.815
14	Aspen	1.315	1.294	0.004	1.792	0.734
15	Riparian	1.760	1.744	0.002	2.773	0.635

- Insufficient data for computation

Table 2.3-222 Shannon-Weiner diversity indices (H'), unbiased estimates of H' (E(H')), variance of H' (var (H')), maximum expected value of H' (H'(max)), and equitability (J) for all avifauna transects during sample period 5, June 1975, for RBOSP

Transect Number	Vegetation Type	H'	E(H')	var(H')	H'(max)	J
1	Bottomland meadow	2.415	2.372	0.005	3.045	0.793
2	Sagebrush	1.249	1.211	0.006	1.386	0.901
3	Rabbitbrush	1.011	0.987	0.010	1.792	0.564
4	Pinyon-juniper/mixed brush	1.594	1.551	0.007	1.946	0.819
5	Mixed brush	1.157	1.121	0.011	1.609	0.719
6	Pinyon-juniper/sagebrush	2.042	2.011	0.003	2.398	0.851
7	Upland meadow	1.662	1.615	0.005	1.946	0.854
8	Greasewood-sagebrush	1.498	1.478	0.004	2.485	0.603
9	Pinyon-juniper (south slope)	2.084	2.041	0.004	2.485	0.839
10	Pinyon-juniper (north slope)	1.686	1.660	0.007	2.565	0.657
11	Sagebrush	1.351	1.320	0.006	1.946	0.694
12	Mixed brush	1.555	1.530	0.003	2.079	0.748
13	Douglas fir	2.470	2.449	0.001	2.565	0.963
14	Aspen	2.428	2.398	0.002	2.833	0.857
15	Riparian	1.921	1.909	0.002	2.944	0.652

Table 2.3-223 Shannon-Weiner diversity indices (H'), unbiased estimates of H' (E(H')), variance of H' (var (H')), maximum expected value of H' (H'(max)), and equitability (J) for all avifauna transects during sample period 6, October 1975, for RBOSP

Transect Number	Vegetation Type	H'	E(H')	var(H')	H'(max)	J
1	Bottomland meadow	1.192	1.127	0.011	1.386	0.860
2	Sagebrush	0.745	0.718	0.016	1.099	0.678
3	Rabbitbrush	1.648	1.628	0.004	2.079	0.793
4	Pinyon-juniper/mixed brush	1.538	1.477	0.011	1.946	0.790
5	Mixed brush	0.941	0.918	0.008	1.386	0.679
6	Pinyon-juniper/sagebrush	1.355	1.322	0.008	1.946	0.697
7	Upland meadow	0.000	0.000	0.000	0.000	-
8	Greasewood-sagebrush	1.789	1.756	0.005	2.303	0.777
9	Pinyon-juniper (south slope)	0.349	0.335	0.012	0.693	0.503
10	Pinyon-juniper (north slope)	0.654	0.637	0.007	1.792	0.365
11	Sagebrush	1.306	1.278	0.006	2.079	0.628
12	Mixed brush	0.100	0.095	0.003	0.693	0.144
13	Douglas fir	1.352	1.312	0.012	1.946	0.695
14	Aspen	1.145	1.108	0.014	1.609	0.712
15	Riparian	1.031	1.017	0.004	1.946	0.530

- Insufficient data for computation

2.3.7.5

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83 File No. C.9.1.2.1.

Sheet No. 1 of 1

Transect # 1 Vegetation Type Bottomland Meadow Sample Period 6

Date 10/6/75 Time (24 hour) 1700 Temperature (°C) at Start 23°C

Wind (Beaufort Code #) 3 Sky Condition Code # 2 Observer Kennedy

QA Check RDM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Raven	447	A							1
Mountain Bluebird	505	A				III	1	1	
Red-winged Blackbird	596	A		1					1
Western Meadowlark	594	A	III	IIII	1				II

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83

File No. C,9,1,2, 3

Sheet No. 1 of 1

Transect # 2 Vegetation Type Sagebrush Sample Period 6

Date 10/6/75 Time (24 hour) 1545 Temperature (°C) at Start 25°C

Wind (Beaufort Code #) 3 Sky Condition Code # 2 Observer Kennedy

QA Check RDM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Mountain Bluebird	305	B		II	II	III	II		
Horned Lark	428	C				I			
Sage Sparrow	661	C				I			

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83 File No. C,9,1,2,7

Sheet No. 1 of 1

Transect # 3 Vegetation Type Rabbitbrush Sample Period 6

Date 10/9/75 Time (24 hour) 0930 Temperature (°C) at Start 7°C

Wind (Beaufort Code #) 1 Sky Condition Code # 1 Observer Kennedy

QA Check RDM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Golden-crowned Sparrow	678	B			II	I		I	
~~Raven~~	447	A							
Scrub Jay	439	A		I	II		II	I	
White Crowned Sparrow	677	B		~~IIII~~	I	III	II		I
Mountain Chickadee	454	B			IIII			I	I
Mountain Bluebird	505	B					II	I	III
unidentified pass.					I	I			
Pinyon Jay	441	A							~~IIII~~ II
Dark-eyed Junco	662	B		I	I				
Yellow Rumped Warbler	555	B			II				II

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83 File No. C,9,1,2,10

Sheet No. 1 of 1

Transect # 4 Vegetation Type Pinyon-Juniper/mixed brush Sample Period 6

Date 10/11/75 Time (24 hour) 0850 Temperature (°C) at Start 15°C

Wind (Beaufort Code #) 3 Sky Condition Code # 0 Observer Kennedy

End of transect interrupted by gust over 15mph. QA Check MM 1917/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Black-billed Magpie	444	A							1
Mountain Chickadee	454	B		1				1	
Dark-eyed Junco	662	B			11				
Pinyon Jay	441	A						1	
Scrub Jay	439	A		11					
Mountain Bluebird	505	B				1			
Yellow-rumped Warbler	555	B							1
Rufous-sided Towhee	646	C			1				

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83

File No. C,9,1,2,11

Sheet No. 1 of 1

Transect # 5 Vegetation Type Mixed brush Sample Period 6

Date 10/9/75 Time (24 hour) 1650 Temperature (°C) at Start 17°C

Wind (Beaufort Code #) 3 Sky Condition Code # 3(-) Observer Kennedy

QA Check RWM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Dark-eyed Junco	662	B		1	1111				
Mountain Bluebird	505	B			11	111	1	11	111
Scrub Jay	439	A				1	1		
Robin	493	B				1			

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3-4

FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83 File No. C, 9, 1, 2, 16

Sheet No. 1 of 1

Transect # 6 Vegetation Type Pinyon-juniper/Sagebrush Sample Period 6

Date 10/2/75 Time (24 hour) 0740 Temperature (°C) at Start 10°C

Wind (Beaufort Code #) 2 Sky Condition Code # 0 Observer KENNEDY

QA Check RDM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Yellow-rumped warbler	555	B							11
CLARK's Nutcracker	446	A						1	1
Mountain Bluebird	505	B					1		~~1111~~ ~~1111~~ ~~1111~~
unidentified pass.						1			
Robin	493	B							1
Scrub Jay	439	A				1	1	1	
RuFous Sided Towhee	646	C			111				
Sage Sparrow	661	C		1	1	1			
Common Bush Tit	464	C			1111				
Pinyon Jay	441	A						1	

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FIELD DATA SHEET - EMLEN STRIP CENSUS

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Project No. 83

File No. C, 9, 1, 2, 9

Sheet No. 1 of 1

Transect # 7 Vegetation Type UPLAND Meadow Sample Period 6

Date 10/10/75 Time (24 hour) 0705 Temperature (°C) at Start 7°C

Wind (Beaufort Code #) 2 Sky Condition Code # 0 Observer Kennedy

QA Check ROM 10/14/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Horned LARK	428	B				𝍸 𝍸 𝍸 𝍸 III			

ECI

316

FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83 File No. C,9,1,2,11

Sheet No. 1 of 1

Transect # 8 Vegetation Type Greasewood/sage Sample Period 6

Date 10/6/75 Time (24 hour) 08.00 Temperature (°C) at Start 5°C

Wind (Beaufort Code #) 1 Sky Condition Code # 0 Observer Kennedy

QA Check RDM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Common Flicker	373	A				1			1
Pinyon Jay	441	A							IIII II
Yellow-rumped Warbler	555	B							II
White-crowned Sparrow	677	B			1				
Mountain Bluebird	505	B		1	IIII	1	1		
Vesper Sparrow	658	C		1		II			
Brewer's Sparrow	673	C		II					
Scrub Jay	439	A		II					
Clark's Nutcracker	446	A							1
Raven	447	A							II
Tree Sparrow	670	B			II				

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83 File No C,9,1,2,15

Sheet No. 1 of 1

Transect # 9 Vegetation Type Pinyon-Juniper/South Sample Period 6

Date 10/9/75 Time (24 hour) 1530 Temperature (°C) at Start 17°C

Wind (Beaufort Code #) 3 Sky Condition Code # 2 Observer Kennedy

QA Check RDM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Mountain Bluebird	505	B		11	11	1	11		
Scrub Jay	439	A		1	111				

PROGRESS REPORT

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83 File No. C,9,1,2,16

Sheet No. 1 of 1

Transect # 10 Vegetation Type Pinyon-Juniper/north Sample Period 6

Date 10/11/75 Time (24 hour) 0745 Temperature (°C) at Start 10°C

Wind (Beaufort Code #) 1 Sky Condition Code # 0 Observer Kennedy

QA Check RDM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Dark-eyed Junco	662	B	III	1					1
Mountain Bluebird	505	B						1	
Mountain Chickadee	454	B		1	11		1		1
Clark's Nutcracker	446	A						1	
unidentified Passerine									IIII
White breasted Nuthatch	468	B					1		
Robin	493	B					1		

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83

File No. C,9,1,2,17

Sheet No. 1 of 1

Transect # 11 Vegetation Type Sagebrush Sample Period 6

Date 10/10/75 Time (24 hour) 0825 Temperature (°C) at Start 10°C

Wind (Beaufort Code #) 2 Sky Condition Code # 0 Observer Kennedy

QA Check RMM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Mountain Bluebird	505	B	1		III	1	III		##11
Yellow Rumped Warbler	555	B	1	III	III				##1
Horned Lark	428	C							#####
Robin	493	A							IIII
Scrub Jay	439	A			1				
Common Flicker	373	A							II
Vesper Sparrow	658	C		1	1				
Raven	447	A						1	
Clark's Nutcracker	446	A							I
Sage Sparrow	661	C							III

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83 File No. C,9,1,2,18

Sheet No. 1 of 1

Transect # 12 Vegetation Type Mixed brush Sample Period 6

Date 10/8/75 Time (24 hour) 1523 Temperature (°C) at Start 9°C

Wind (Beaufort Code #) 3 Sky Condition Code # 2 Observer Kennedy

QA Check RDM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Clark's Nutcracker	446	A							11
Mountain Bluebird	505	B	1	IIII	1				

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3.21

FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83 File No. C,9,1,2,19

Sheet No. 1 of 1

Transect # 13 Vegetation Type Douglas Fir Sample Period 6

Date 10/7/75 Time (24 hour) 0838 Temperature (°C) at Start 11°C

Wind (Beaufort Code #) 2 Sky Condition Code # 2 Observer Kennedy

QA Check RDM 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Robin	493	B		1					1
Hermit Thrush	499	C				1			
Gray headed Junco	663	B	1		III				1
Downy Woodpecker	390	A					1		
Red breasted Nuthatch	469	B			1	1			
Clark's Nutcracker	446	A					11		11
Blue Grouse ♂	134	A		1					

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83

File No. C,9,1,2,2D

Sheet No. 1 of 1

Transect # 14 Vegetation Type Aspen Sample Period 6

Date 10/8/75 Time (24 hour) 1650 Temperature (°C) at Start 8°C

Wind (Beaufort Code #) 0 Sky Condition Code # 1 Observer Kennedy

QA Check Rom 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Townsend's Solitaire	495	B			1			1	
Grey-headed Junco	663	B		1	111				1111 111
Mountain Chickadee	454	B			1		11	1	
Blue Grouse	134	A		1111					
Clark's Nutcracker	446	A						1	

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FIELD DATA SHEET - EMLEN STRIP CENSUS

Project No. 83

File No. C,9,1,2,21

Sheet No. 1 of 1

Transect # 15 Vegetation Type Riparian Sample Period 6

Date 10/8/75 Time (24 hour) 0725 Temperature (°C) at Start -2°C

Wind (Beaufort Code #) 1 Sky Condition Code # 0 Observer Kennedy

QA Check Rem 10/17/75

Species	Code No.	Adj. Cat.	Number Observed per Strip						Fly Over
			0-10'	10'25'	25-50'	50-100'	100-200'	200-400'	
Mountain Bluebird	505	B						11	
Yellowrumped Warbler	555	B	11	𝍸 11	1111	11			𝍸 1
White Crowned Sparrow	677	B	1	11					
Dark-eyed Junco	662	B			1				
Redwinged Blackbird	596	A						11	
Common Snipe	241	B		1					
Scrub Jay	439	A						1	

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P3.C.9.3.2

WATERFOWL COUNT RESULTS

Date: 10/6/75 Observer: P.L. Kennedy Pond: Stake Springs

Times: 1230-1295 Temp: 29°C Wind: 4 ! Sky: =O

Project: 83 Other Comments: No waterfowl observed

Rom 10/15/75

Species NONE		Observations							
/	No.								
	Time								
	No.								
	Time								
	No.								
	Time								

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WATERFOWL COUNT RESULTS

83.C.9.3.2

Date: 10/6/75 Observer: P. Kennedy Pond: Stake Spring

Times: 1835-1850 Temp: 20°C Wind: 1 Sky: 1

Project: 83 Other Comments: No birds observed

ROM 10/15/75

Species		Observations							
	No.								
	Time								
	No.								
	Time								
	No.								
	Time								

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82.C.9.3.2

WATERFOWL COUNT RESULTS

Date: 10/7/75 Observer: Kennedy Pond: Stake Springs

Times: 1415-1430 Temp: 17°C Wind: 4 Sky: 1

Other Comments: Very windy all day

from 10/15/75

Species		Observations								
Mallard	No.	7	2 females 5 males							
	Time									
	No.									
	Time									
	No.									
	Time									
	No.									
	Time									
	No.									
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83.C.9.3.2

WATERFOWL COUNT RESULTS

Date: 10/9/75 Observer: Kennedy Pond: Stake Springs

Times: 0845-0900 Temp: 9°C Wind: 1 Sky: 0

Other Comments: No birds observed

ROM 10/15/75

Species		Observations							
	No.								
	Time								
	No.								
	Time								
	No.								
	Time								

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83.C.9.3.2

WATERFOWL COUNT RESULTS

Date: 10/10/75 Observer: Kennedy/Horner Pond: Stark's Springs

Times: 1320-1345 Temp: 17°C Wind: 5 Sky: 0

Other Comments:

rcm 10/15/75

Species		Observations							
Mallard	No.	1 (Drake)							
	Time								
Blue-winged Teal	No.	5							
	Time								
Green-winged Teal	No.	1							
	Time								
	No.								
	Time								
	No.								
	Time								
	No.

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83C.9.3.2
QA Circle
Tom Turner

WATERFOWL COUNT RESULTS

Date: 10/11/75 Observer: Kenned. Pond: Stater Spring

Times: 1820-1845 Temp: 17°C Wind: 3 Sky: O/

Other Comments: No birds observed

ROM 10/15/75

Species	Observations								
	No.								
	Time								
	No.								
	Time								
	No.								
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Project 83

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83.C.9.3.2

WATERFOWL COUNT RESULTS

Date: 10/12/75 Observer: Kennedy Pond: Stake Springs

Times: 0710-0725 Temp: 6°C Wind: 1 Sky: 0

Other Comments: No birds observed

rom 10/15/75

Species		Observations							
	No.								
	Time								
	No.								
	Time								
	No.								
	Time								

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83.C.9.32

WATERFOWL COUNT RESULTS

Date: 10/13/75 Observer: Kennedy Pond: Baker Springs

Times: 0815-0830 Temp: 5°C Wind: 1 Sky: 0

Other Comments:

rom 10/15/75

Species		Observations							
Killdeer	No.	1							
	Time								
	No.								
	Time								
	No.								
	Time								
	No.								
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PROJECT PROGRESS REPORT

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QUALITATIVE AVIAN RECORD

Date 10/6/75 Observer Kennedy Project 83

RDM 10/15/75

Species	Location and Habitat Type	Number	Time	Sky	Temperature	Wind
	Dead Horse Ridge / Mixed Brush (South Slope)		1345	0	25°C	4
Clark's Nutcracker		1	↓			
			1405			
	Dead Horse Ridge / Mixed Brush (North Slope)		1415	1	25°C	4
			↓			
Vesper Sparrow		1	1430			
	Dead Horse Ridge / P-J (Ridgetop)		1495	1	24°C	4
			↓			
Chipping Sparrow		111	1515			
	Discontinued due to high winds					

A3.C.P.32

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QUALITATIVE AVIAN RECORD

Date 10/7/73 Observer Kennedy Project 83

Rem 10/15/75

Species	Location and Habitat Type	Number	Time	Sky	Temperature	Wind
	Bald / Sagebrush Hillc		1145	1	17°C	5
Horned Lark		45				
	Mixed Brush (North facing Slope) Sagebrush Hill		1145	1	17° C	5
No birds						
	Box Elder Gulch (Mixed Brush)					
Killdeer		1	1300	1	18°C	5
	Very windy all day ; so qualitative counts were not continued					

83.3.8.4.2

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QUALITATIVE AVIAN RECORD

Date 10/8/75 Observer P. Kennedy Project 83

RDM 10/15/75

Species	Location and Habitat Type	Number	Time	Sky	Temperature	Wind
	Greasewood / Sage - Ryan Gulch		1230	1	1.3°C	3
Scrub Jay		II				
	Sagebrush / 84 mesa		1300	1	13°C	3
Horned larks		HHH HHH HHH				
Pinyon Jay		29				
Mountain Bluebird		I				
Sage Sparrow		III				
	Sagebrush / 84 mesa		1330	1	13°C	3
No birds						
	Discontinued due to high winds					

83.2.93.2

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QUALITATIVE AVIAN RECORD

Date 10/9/75 Observer Kennedy Project 83

RBM 10/15/75

Species	Location and Habitat Type	Number	Time	Sky	Temperature	Wind
	Ryan Gulch / Bottomland meadow		1125	0	17°C	2
Raven		II				
	Sagebrush / Sage - Ryan Gulch		1140	0	17°C	3
White-crowned sparrow		I				
Clark's Nutcracker		I				
Yellow-rumped warbler		I				
Dark-eyed Junco		I				
Horned Lark		II				
	P-J woodland / 1½ miles W. of Ryan School		1220	0	19°C	2
Pinyon jay		I				
Raven		I				
White-breasted Nuthatch		I				
	Corral Gulch / Bottomland Meadow					
Mourning Dove		I	1250	0	20°C	2
	Corral Gulch / Riparian					
Mallard		~~IIII~~ IIII	1305	0	21°C	1
Brewer's sparrow		IIII				
Song Sparrow		IIII				
Common Flicker		I				
Pinyon jay		I				

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QUALITATIVE AVIAN RECORD

Date 10/11/75 Observer Kennedy Project 83

rdm 10/15/75

Species	Location and Habitat Type	Number	Time	Sky	Temperature	Wind
	Mixed Brush/Below Tower					
	P-J transect		0915	0	15°C	4
Rufous-sided Towhee		1				
Mountain Bluebird		IIII				
Dark-eyed Junco		1				

83.C.77.2

Ft. Richardson - Tom Turner

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QUALITATIVE AVIAN RECORD

Date 10/11/75 Observer Kennedy Project 83

ROM 10/15/75

Species	Location and Habitat Type	Number	Time	Sky	Temperature	Wind
	Mixed Brush/Scrub/berry predominant shrub/Airplane Ridge		1745	0	17°C	4
White-crowned sparrow		1	↓			
			1800			

83 0 55-2

P3.C.9.4.4.1.1

AERIAL RAPTOR CENSUS REPORT AND SUMMARY FORM

Project/Study 83/66 Date Flown 8/18/75 Survey Area Tract C-a and surround area

Observers: R Front - Pat Kennedy L rear - Craig Kling Pilot/Aircraft Len Baur/Cessna 26

Time: Start 1207 Finish 1390 ~~Est. Ground~~ Indicated Air Speed 90-100mph Altitude 150-200' see transect

Weather: Temperature 75°F Wind 15-20mph Percent Cloud Cover 05% -

Air Bouncy Light Good Analyst Pat Kennedy Craig Kling

from 9/2/75.

Species	Number			Location			Notes and Comments
	Adlt	Imm.	Unkn	Section	Town.	Range	
American Kestrel	1			10	2S	98W	T.1. Kestrel observed near pipeline N. of Ryan Gulch. One coyote observed at same location.
Cooper's Hawk			1	16	2S	98W	T.2 Perched in a pinyon tree south of Ryan Gulch.
American Kestrel			1	9	2S	98W	T.2 Flying in Ryan Gulch
Unid. accipiter			1	8	1S	98W	T.3. South of Duck Creek
Golden Eagle		1		35	2S	99W	Between T.5 and T.6. Flapping rapidly at southern transects boundary
Unid. Falcon			1	11	1S	99W	T.6. Flying rapidly above P-J grove North of cabin on Big Duck Creek
American Kestrel	1			9	1S	98W	Flying near Duck Creek
Red-tailed Hawk	1			4	2S	99W	Soaring over ridge top

RBOSP PROJECT COPY

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83C.9.4.2.1

AERIAL RAPTOR CENSUS REPORT AND SUMMARY FORM

Project/Study 83/66 Date Flown Nov 6, 1975 Survey Area RBOSP

Observers: RF R.L. Kennedy LR C.L. Klug Pilot/Aircraft Iron Baur / Cessna 20

Time: Start 900 Finish 1545 Est. ~~Ground~~ Indicated Air Speed 80-90 mph Altitude 100-200 ft

Weather: Temperature 52°F Wind 4 Percent Cloud Cover 1

Air relatively calm Light Good Analyst R.L. Kennedy

June 12/9

Species	Number			Location			Notes and Comments
	Adlt.	Imm.	Unkn	Section	Town.	Range	
Raven	1			8	15	98W	South of Duck Creek
Raven	1			29	15	98W	By 89 ranch
Raven	1			29	15	98W	north of Corral Gulch
Raven	2			~~8~~ 2	25	98W	~~89 mesa~~ Wolf Ridge
Raven	1			18	15	98W	89 mesa
Raven	2			8	25	99W	north of the Met tower
Raven	1			17	25	99W	Southwest of tract
Raven	1			36	15	100W	Sagebrush hill
Golden eagle			2	9	15	100W	

RBOSP PROGRESS REPORT

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2.3.8 REPTILES AND AMPHIBIANS

No Data were collected for this program during the reporting quarter.

2.3.9 INVERTEBRATES

2.3.9.1 Introduction - No changes have occured since Progress Report-4. See section 2.3.9.1 in Progress Report-4 for the objectives of the invertebrate study.

2.3.9.2 Methods - No changes in methodologies have occurred since Progress Report-4. See section 2.3.9.2.1 and 2.3.9.2.2 in Progress Report-4 for the methods of collection and laboratory analysis of invertebrate samples, respectively.

2.3.9.3 Results - Invertebrate samples were taken utilizing seven different techniques (pitfalls, litter D-Vac, trap D-Vac, herbaceous sweeps, beating, aerial sweeps and Malaise traps) in June, July, and September, 1975 at five sampling sites established in different vegetation types on or near Tract C-a. Invertebrate sampling locations are the same as several used for small mammal sampling and are described in Table 2.3-226. Table 2.3-227 represents a list of the invertebrate groups collected and identified to date. Species groups deemed important numerically or because of their feeding habits will be sent to recognized experts for confirmation of species identification.

2.3.9.3.1 Greasewood-Sagebrush Habitat (Site 1) - Density calculations are made for invertebrates captured in pitfalls at the greasewood-sagebrush site (Site 1) by plotting capture rate against total numbers removed.

To obtain this estimate, the capture rate must decrease over time during the sampling period. This criterion has not been met for many orders of invertebrates, however. In many cases the data trends show either large day-to-day population fluctuations, drastic declines or increases in populations, or little population fluctuation over the 10-day trapping period.

In June at the greasewood-sagebrush habitat the estimated density of ground dwellers was calculated at 4.13 invertebrates per m^2. Phalangida was the most abundant order with a relative abundance of 21.89% (Table 2.3-228). Hymenoptera and Coleoptera were the second and third most abundant orders captured, accounting for 36.48% of total invertebrates captured in the greasewood-sagebrush habitat in June. Density estimates for these groups could not be made because a gradual decline in their capture rate was not apparent. Results from feeding habit classification show saprovores to be the numerically dominant feeding type, although three other feeding types had over 10% of the total numbers captured (Table 2.3-229). Harvestmen (Phalangida) were the largest group of saprovores, although other saprovores consisted of Colembola and Thysanura. Predators, the second largest group at Site 1, were almost exclusively spiders (Araneida) and ground beetles (Coleoptera: Carabidae). Ants (Hymenoptera: Formicidae) were the only family included in the omnivore feeding group.

In July, invertebrates in 13 orders were taken. Densities were calculated for Orthoptera, Araneida, and Phalangida, which together contributed 16.33% of the total numbers captured. Of these, Orthoptera (density = $0.21/m^2$) had a relatively constant capture rate over the 10-day period, and Araneida (density = $6.55/m^2$) and Phalangida (density = $1.22/m^2$) fluctuated (Table 2.3-230). The capture rates of remaining abundant orders did not meet the assumptions of density estimation. Five of the feeding habit types contained greater than 11% of the total captures of the ground-dwelling fauna in the greasewood-sagebrush habitat (Table 2.3-231). Of these five, unknowns (primarily Acari) contained the largest total at 33.5% followed by saprovores (Phalangida, Collembola, and Psocoptera) at 28.0%.

In September, 741 invertebrates representing 11 orders were captured, giving an estimated density of 9.97 individuals per m^2 (Table 2.3-232). Daily captures for most orders generally fluctuated; however, numbers of spiders (Araneida) and beetles (Coleoptera) taken remained relatively constant. Mites (Acari) and ants (Hymenoptera: Formicidae), the two largest groups in total captures over the 10-day period, had the largest day-to-day fluctuations in captures.

The percentage of unknowns in the food habit categories reflects the percentage of Acari in the total captures from the greasewood-sagebrush habitat in September (Table 2.3-233). The second largest feeding category, omnivore, consisted entirely of ants, and the third, saprovore, consisted of Collembola, Psocoptera, and Phalangida. The last feeding category with over 10% of the total captures, predator, was made up primarily of spiders (Araneida), with some beetles (Coleoptera) and 1 centipede (Lithobiomorpha).

A comparison of pitfall results from all three sampling periods at the greasewood-sagebrush site shows the lowest total captures in June with 233 individuals, a peak of 1,409 in July, and 741 in September. Acari was by far the most numerous invertebrate order captured in July and September in greasewood-sagebrush, accounting for 32% of the total in July, and 44% in September. The most numerous insect group captured was ants (Hymenoptera, Formicidae), which were taken in relatively constant numbers during each sampling period. Over the summer, changes in percentages of total captures in each feeding category at the greasewood-sagebrush habitat varied considerably. Changes in the unknown feeding category are directly related to changes in Acari captures during the three sampling periods, and changes in omnivore percentages were based exclusively on captures of ants. In the saprovore level, changes in percentage of total captures are based on captures in a variety of orders, and as such are dependant on different numerically dominant orders in each period. In June, Phalangida was the numerically dominant saprovore, in July - Psocoptera, and September - Collembola.

In samples taken from the litter at the greasewood-sagebrush habitat (Site 1) in June, the number of invertebrates varied from 0 to 117.6 per kilogram of litter (Table 2.3-234) with an average of 38.0 invertebrates per kilogram of

litter and a standard error of 20.5 (Table 2.3-235). Variation in microhabitat partially accounts for the range of numbers per kilogram litter. Sample number 132 was taken in an open grassy area and contained no invertebrates, while number 133 was taken under a greasewood plant, and yielded the largest estimate of invertebrate numbers per kilogram litter (117.6). The remaining three samples were from under sage and varied from 18.2 to 30.3 invertebrates per kilogram litter. Numerically, predominant groups at the greasewood-sagebrush site were dictynid spiders (Dictynidae) and ground beetles (Carabidae), which contributed just less than half of the 56 total captures (Table 2.3-236). Eight winged ant reproductives were also captured.

Feeding habit results for the greasewood-sagebrush site in June show the predator level as the most abundant, due to the influence of spiders and ground beetles, the two most abundant groups captured (Table 2.3-237). The unknown category consisted mainly of mites. Herbivores, the third largest feeding category, consisted of a variety of families in the orders Thysanoptera, Hemiptera, Homoptera, Coleoptera, and Lepidoptera.

During July, the number of invertebrates per kilogram of litter at the greasewood-sagebrush site averaged 53.7 with a standard error of 13.6 (Table 2.3-238). Variation in sample results (Table 2.3-239) is again partially explained by microhabitat differences existing at the sample site. For example, sample number 220, which contained only 8.5 invertebrates per kilogram of litter, was taken in an open grassy area dominated by a rye grass (Elymus cinereus). Of the other four samples, numbers 219 and 222, with 84.6 and 49.3 invertebrates per kilogram litter, respectively, were taken under sagebrush (Artemisia tridentata) and samples 218 (46.8/kilogram) and 221 (79.3/kilogram) from under rabbitbrush (Chrysothamnus sp.). Eighty-five invertebrates in 17 species groups were taken in the litter samples. Thirty-three percent of these were mites (Acari) (Table 2.3-240).

The most numerous insect families taken in July litter samples were ground beetles (Carabidae) and ants (Formicidae), both of which showed a preference for sage or rabbitbrush litter (Table 2.3-240). Unknowns in theorders Hemiptera and Diptera, two orders not normally abundant in the litter, were captured in relatively large numbers in July litter samples. Of the 17 total species groups encountered, greater than 1/3 were beetles (Coleoptera).

The percentage of total captures in each feeding type is presented in Table 2.3-241. The unknown category is the largest with 62.4% of all invertebrates captured, including Acari, adult Diptera, and unknown Homoptera and Hemiptera. The omnivore level (11.8% of captures) consisted entirely of ants, and the predator level consisted of spiders and ground beetles (Carabidae).

In September, an average of 348 invertebrates was taken per kilogram of litter at the greasewood-sagebrush site with a standard error of 79.7 (Table 2.3-242). Sample results ranged from 129 to 578 invertebrates per kilogram of litter (Table 2.3-243). Sample number 333, which had the lowest total number of individuals (129.4), came from an area dominated by rye grass, while totals for the two samples taken under sagebrush contained 419.5 and 399.0 invertebrates per kilogram of litter. Of the 498 invertebrates taken in litter samples captured in the greasewood-sagebrush habitat in September, approximately 81% were booklice (Psocoptera) and mites (Acari), which contributed 44% and 37% of the totals, respectively (Table 2.3-244). Approximately three-quarters of the Psocoptera came from samples taken under rabbitbrush, while the remainder were fairly evenly distributed among the four remaining samples. The greasewood-sagebrush site was the only sampling location where Psocopterans occurred in high numbers. Sixty-three percent of Acari were taken under sage; the remaining 37% were evenly distributed among the three remaining samples. Diplura, a soft-bodied insect order characteristic of damp litter situations, were taken only at this site, and represented approximately 3% of the total individuals captured (Table 2.3-244). Of the 25 species groups encountered in the litter in September, more than one-third were beetles (Coleoptera). Results of percentage calculations of total captures in each feeding type in September at the greasewood-sagebrush site reflect the numerical dominance of Psocoptera and Acari. Two hundred and seventeen of the 233 saprovores were Psocopterans and most of the unknown feeding category was Acari (Table 2.3-245).

A comparison of results for Site 1 over the three sampling periods shows an increase in average numbers of invertebrates per kilogram of litter from 38.0 in June to 53.7 in July to 348.0 in September. This increase was demonstrated for all microhabitats sampled at this site. Actual captures from all five sites sampled in greasewood-sagebrush went from a total of 56 to 498 invertebrates. Mites (Acari), which were the numerically dominant group in July and

September litter samples, were absent from samples taken in June. Only one dictynid spider, the second largest group in June samples, was present in July and none were taken in September. Ground beetles (Carabidae), the most common insect family in June (16 individuals), decreased in July to 6 in September samples to one individual.

Psocoptera numbers peaked in September in the greasewood-sagebrush litter samples with 217 individuals (Table 2.3-244). Only five individuals were captured in July (Table 2.3-240) and none appeared in the June samples.

Only three insect species groups were found in both June and July samples at the greasewood-sagebrush site, although this does not include non-litter insect families, or non-insect invertebrates which were not identified below the family level. From July to September, only three groups were present.

Results of sweeping the ground layer vegetation of the greasewood-sagebrush habitat in June showed 127 specimens captured in 100 sweeps (Table 2.3-246). Of this total, over one-half of the invertebrates fell into three groups: thrips (Thysanoptera), leafhoppers (Cicadellidae), and ants (Formicidae). Site 1 is the only site where thrips and Collembola were collected in June and the only site where leafhoppers were found in large numbers (nearly one-fourth of the total invertebrate captures).

The greasewood-sagebrush site had the largest total herbaceous sweep captures in June, as well as the largest number of species. Herbivores made up 57% of the fauna captured in herbaceous sweeps at Site 1 (Table 2.3-247). Thrips and leafhoppers, the dominant groups in total captures, are the major contributors to this feeding category. Ants were the only omnivores sampled, and in the flower feeding level there were a variety of flies (Diptera) and wasps and bees (Hymenoptera) with no family or species group dominating the total captures in the feeding type.

Four hundred and nineteen invertebrates were taken in 100 sweeps at site 1 in July (Table 2.3-248). A variety of invertebrates made up the total, including 38 families and 66 species groups. Numerically dominant families were leafhoppers (Cicadellidae) and chloropid flies (Chloropidae), each with 27% of the

total numbers. Leafhoppers were important in terms of total numbers at all sites, but Site 1 is the only sampling area in which Chloropidae are an important part of the fauna. These two families also contained the largest number of species groups, however, the most diverse fauna occurred in the order Hymenoptera in which 56 individuals representing 22 species groups were captured. Of these 22 species groups, 17 were in families of wasps whose larvae are parasites of other invertebrates. One parasitic family, Eulophidae, contained 4% of the total captures. Other groups having a substantial percentage of total captures were Thysanura (8%) and Thysanoptera (5%).

Herbivores were the most abundant invertebrates captured in July (39.4% of total captures); many of these were leafhoppers and thrips (Thysanoptera). Hemiptera, Coleoptera, Lepidoptera, and one wasp family were also included in this category (Table 2.3-249). In the flower feeding category the majority of the captures were chloropid flies, adult parasitic wasps, and a few adult Diptera.

In September, 173 invertebrates representing 25 families and 38 species groups were captured in 100 sweeps at the greasewood-sagebrush habitat (Table 2.3-250). Sixty-one percent of all specimens taken were seed bugs (Lygaeidae); no other group represented more than 6% of the total sample. The abundance of seed bugs in the September herbaceous sweep captures is reflected in the large percentage (72.8%) of total captures which were herbivores; seed bugs alone contributed 61% of the total captures. Only one other feeding category contained more than 10% of the total captures, and these were flower feeders, primarily Hymenoptera and a few Diptera (Table 2.3-251).

Over the sampling season, total captures peaked in July at Site 1, with much smaller totals in June and September. This trend is also evident in the number of species groups sampled where the total of 66 in July is the most captured at any site all summer.

Cicadellidae, one of the most abundant families in June and July samples, was virtually absent from September samples, contributing less than 2% of the total

for that month. Thrips (Thysanoptera), the second most abundant group in June, were also present in relatively large numbers in July, but absent from September samples.

Chloropid flies, which totaled 27% of the July captures, were also present in June and September, but in each period the species groups were different.

Seed bugs (Lygaeidae) were the only abundant species in September at this site, and were present in June samples, although only one specimen was taken.

Of the 66 species groups present in July, 14 were also present in June, including four species of ants (Formicidae) and one species group of thrips (Thysanoptera). In September, only one species of beetle and one species of seed bug (Lygaeidae) were present which were also taken in June samples.

Herbivores were the most abundant invertebrates in herbaceous sweep samples during all sampling periods in the greasewood-sagebrush habitat.Abundant groups within this feeding type varied each period, with different species groups of leafhoppers dominant in June and July, and seed bugs the numerically dominant group in September. Flower feeders also contributed substantially to the total captures each period. The bulk of these were in a variety of dipteran and hymenopteran families. The increase in relative abundance of flower feeders in July is due to the large number of chloropid flies in addition to the above two orders.

Beating samples taken from tall sagebrush plants in the greasewood-sagebrush habitat in June contained 48 invertebrates in 20 species groups (Table 2.3-252). Four groups contained more than 10% of the total captures, with leafhoppers and mites most abundant, followed by aphids (Aphididae) and plant bugs (Miridae). The 20 species groups were relatively evenly distributed among the orders. The herbivore feeding type contained the largest number of captures at the greasewood-sagebrush site (Table 2.3-253).

Beating samples taken from the greasewood-sagebrush habitat in July revealed 777 invertebrates in 35 species groups (Table 2.3-254). Sixty-five percent of

the total numbers were contained in two families, plant bugs (Miridae) and leafhoppers (Cicadellidae). An additional 29% of the total was divided between thrips (Thysanoptera), aphids (Aphididae), and mites (Acari). The total of 777 invertebrates captured from sage is the largest total from beating samples at any site. The 35 species groups is also a high total for all sites, and included eight species groups of Miridae and five of Cicadellidae.

Miridae, Cicadellidae, Aphididae, and Thysanoptera were the most abundant herbivores taken in beating samples in July (Table 2.3-255). All are plant sap feeders.

In September, 173 invertebrates (15 species groups) were captured in beating samples from sagebrush (Table 2.3-256). Numerically dominant groups included aphids (Aphididae) and plant bugs (Miridae) which, combined, accounted for over 50% of the total captures. Thrips (Thysanoptera), leafhoppers (Cicadellidae), and mites (Acari) each provided greater than 12% of the total numbers.

Over the sampling season, the total invertebrates captured in beating samples at the greasewood-sagebrush site peaked in July as did the number of species groups. Of the 35 species groups present in July, five were also captured in June, although only mites (Acari) were considered numerically dominant in the early sampling period. That is, none of the abundant species groups of aphids, leafhoppers, or plant bugs present in June were present and abundant in July. September results showed five species groups which were also present in July. Of these, an aphid (Aphididae) species group was present and numerically dominant during both sampling periods. Species groups of Miridae and Cicadellidae which contributed substantially to their families' abundance in July were not collected in September.

Herbivores were the dominant feeding category present throughout the sampling season.

Aerial sweeps of sagebrush foliage taken in June at the greasewood-sagebrush habitat revealed 100 invertebrates in 18 species groups (Table 2.3-257). Plant bugs (Miridae) contributed 55% of this total, and 17% of the total were thrips

(Thysanoptera). All other families had less than 6% of the total captures. Of the 18 species groups recorded one-third were parasitic wasps in the order Hymenoptera.

Feeding habits for the invertebrates captured in aerial sweeps from sagebrush at the greasewood-sagebrush site in June show 78% herbivores, the bulk of which were Miridae and Thysanoptera (Table 2.3-258).

Aerial sweeps taken from sage in the greasewood-sagebrush habitat in July contained 300 invertebrates representing 43 species groups (Table 2.3-259). Numerically dominant families included leafhoppers (Cicadellidae) with 42% of the total captures and thrips (Thysanoptera) and plant bugs (Miridae) each with over 10% of the total captures. Of the 43 species groups recorded, nearly one-third were parasitic wasps.

The combined total captures of the three abundant families make up the bulk of the herbivore category in the sagebrush aerial sweep samples at the greasewood-sagebrush site (Table 2.3-260). Of the remaining 25.7% of the total captures not in the herbivore category, only predators contributed greater than 10%. This feeding type included minute pirate bugs (Anthocoridae), ladybird beetles (Coccinellidae), and crab spiders (Thomisidae) as the most abundant families.

In September, aerial sweeps from sagebrush in the greasewood-sagebrush habitat contained 172 invertebrates in 22 species groups (Table 2.3-261). Four species groups, Thysanoptera, Miridae, Cicadellidae, and Aphididae each contributed 15% or more of the total captures. Nearly one-half of the species groups taken were parasitic wasps in the order Hymenoptera. This group includes the family Platygasteridae, which was the fifth most numerous group with 16 individuals.

All of the groups with over 15% of the total captures made up the herbivore category, which totals 73.3% of the invertebrates taken (Table 2.3-262). Flower feeders, the second most abundant feeding type, consisted entirely of adult wasps.

Over the season, the total captures and number of species groups in aerial sweep samples from sagebrush in the greasewood-sagebrush habitat peaked in July. Thrips and plant bugs abundant in June were not taken in July samples. July and September samples had six species groups in common, including the dominant species group in each of the families of aphids (Aphididae) and leafhoppers (Cicadellidae) which was abundant in both sampling periods. Herbivores were the dominant feeding category during all sampling periods in aerial sweeps of sagebrush.

Results of 10 days of trapping invertebrates with a Malaise trap at the greasewood-sagebrush habitat (Site 1) in June yielded an estimated 5,206 invertebrates (Table 2.3-263). Upon completion of identifications for the first June Malaise trap sample it was determined that complete identification of all samples would be impossible due to time and budgetary constraints. A subsampling program was undertaken for the remainder of the samples, wherein each sample was divided into sixteen parts. After enough one-sixteenth subsamples from a site were identified to obtain a minimum of 100 individuals, identifications were stopped. An estimate of the total captured was then made by multiplying the subsample capture total by sixteen and dividing the resulting total by the number of one-sixteenth subsamples actually identified. In June, additional time allowed more complete identification of some samples, and the estimated totals were adjusted accordingly. In July and September, all sample totals were estimated using a one-fourth subsample. Flies (Diptera) and ants, bees, and wasps (Hymenoptera) were clearly the numerically dominant orders in the samples. The largest families in the order Diptera were midges (Chironomidae), anthomyiid flies (Anthomyiidae), gall midges (Cecidomyiidae), syrphid flies (Syrphidae), trixoscelidid flies (Trixoscelididae), and big-headed flies (Pipunculidae); all families were represented with over 100 individuals in the samples.

About 30% of the invertebrates taken by Malaise trap in June at this site were Chironomidae, and close to 13% were Anthomyiidae. Diptera also had the largest number of families (24). In Hymenoptera, 16 families were taken with Ichneumonidae, Braconidae, and Halictidae being the most abundant families.

Three of the above families are flower feeders as adults, including Chironomidae. Their combined total captures are just less than one-half of all captures at this site in June, and as such, they make up most of the flower feeder level (Table 2.3-264). Two of the remaining abundant dipteran families, Anthomyiidae and Trixoscelididae, make up 17 of the 21% total captures in the unknown feeding category.

Results from the greasewood-sagebrush site in July yielded 4,372 invertebrates in 88 species groups. Two families contained greater than 10% of the total numbers; leafhoppers (Cicadellidae) with 12% of the total captures, and anthom iid flies (Anthomyiidae) with 21.8%. Other families with greater than 5% of the total captures were dipterans and include midges (Chironomidae) and chloropid flies (Chloropidae). Diptera was by far the most abundant order captured, containing over 60% of the total captures. Hymenoptera, although containing less than 15% of the total captures, had over one-half of the species groups, with most of these in families of parasitic wasps (Table 2.3-265).

Anthomyiidae comprised a major portion of the high percentage of invertebrates in the unknown feeding category (Table 2.3-266). The second largest feeding category, flower feeders, contained a variety of Hymenoptera and Diptera. The last feeding category with over 10% of the total captures was the herbivore category, with leafhoppers making up nearly the entire group.

In September, Malaise trap captures from the greasewood-sagebrush habitat totaled 1,420 individuals in 62 species groups (Table 2.3-267). Three groups contained greater than 10% of the captures. Anthomyiid flies (Anthomyiidae) were the most abundant with 20% of the captures, followed by ant reproductives (Formicidae) at 16.9% and a group of several unknown adult moth species with 11.5% of the total captures. Of the remaining families, chloropid flies (Chloropidae) had 9.2% of the total captures. Of the 66 species groups, 56 were evenly divided among families of Diptera and Hymenoptera.

Flower feeders were the most abundant feeding type of the invertebrates captured (Table 2.3-268). Of the most abundant groups, the adult moths and Chloropidae are flower feeders, and made up just less than half of the total in this feeding

category. The remainder were a variety of families in Hymenoptera and Diptera. The remaining abundant feeding types, omnivores and unknowns, were made up primarily of ants and anthomyiid flies, respectively.

Over the sampling season, total captures declined from June to September, as did the number of species groups. Thirty-nine species groups were present in both June and July, including one species of Anthomyiidae which contributed 1,036 individuals in July and most of the 288 individuals in September. The abundant group in June samples, Chironomidae, showed large population decreases over the season accounting for much of the reduction in invertebrate numbers taken by Malaise trap from June to July.

The dominant anthomyiid fly species, which contributed significantly to total numbers in July, had only 44 representatives in September. In addition, 16 species groups present in July were also taken in September, including only a small group of leafhoppers (Cicadellidae) and chloropid flies (Chloropidae) which contributed 524 and 200 individuals respectively to the July totals. Overall Site 1 had by far the largest total captures in Malaise traps of any site.

Flower feeders dominated the June samples, with much of this group in the nectar feeding Chironomidae. In July, the relative abundance of unknowns began to increase, based on relative increases of anthomyiid fly numbers. In September the feeding category showing the largest increase was the omnivore type, reflecting the increases in ant numbers in Malaise samples.

At the greasewood-sagebrush site, five Trap D-Vac samples were taken from rabbitbrush each sampling period. In June, 184 invertebrates were taken giving density estimates ranging from 182.6 to 2,101.3 invertebrates per cubic meter of plant sampled (Table 2.3-269). This resulted in a calculated average of 844.6 invertebrates per cubic meter of rabbitbrush at the greasewood-sagebrush site and a standard error of 341.7 (Table 2.3-270). An obvious source of variation in the samples taken from rabbitbrush is apparent when data from

individual plant samples are examined. The bulk of thrips (Thysanoptera) and leafhoppers (Cicadellidae) was taken from one plant (the second smallest plant), substantially increasing the number of invertebrates per cubic meter for that plant. The remaining abundant family (Anthicidae) was evenly distributed on all five rabbitbrush plants sampled (Table 2.3-271).

Of the 184 invertebrates captured, Thysanoptera was the most abundant order, contributing greater than one-fourth of the total. Two other families, leafhoppers (Homoptera:Cicadellidae) and ant-like flower beetles (Anthicidae) each contained more than 15% of the total captures. Herbivores dominated the feeding habit results, contributing 91% of the total captures (Table 2.3-272).

In July, the number of invertebrates per cubic meter of plant ranged from 172.7 to 2,544.6 for samples taken from rabbitbrush (Table 2.3-273). The average number of invertebrates was 1,024.5 per cubic meter of plant (Table 2.3-274).

A total of 107 invertebrates in 25 species groups was captured in July; 35% of these were in the order Thysanoptera (Table 2.3-275). Most of the thrips were taken from one plant, accounting for the high density estimate for sample no. 217. Other abundant groups included four species of leafhoppers (Cicadellidae), an antlike flower beetle (Anthicidae), and two species of snout beetles (Curculionidae), all with over 10% of the total captures.

Eighty-two herbivores were captured in Trap D-Vac samples from rabbitbrush in July, including all of the abundant groups except Anthicidae. This gives a percentage of 76.6% of the total captures in this feeding type (Table 2.3-276).

In September, 106 invertebrates were captured at the greasewood-sagebrush site for a range of 372.0 to 6,526.6 invertebrates per cubic meter (average of 1,979.7) (Tables 2.3-277 and 2.3-278). Thrips (Thysanoptera) made up 48% of the total invertebrates captured, with half of these obtained from one plant. Other

abundant groups were leafhoppers (Cicadellidae) with 13% of the total captures, snout beetles (Curculionidae) with 19%, and checkered beetles (Cleridae) with 7% of the total captures (Table 2.3-279).

As in June and July, September samples contained a large percentage of herbivores (Table 2.3-280). In Trap D-Vac samples from rabbitbrush at the greasewood-sagebrush site, total captures were higher in June (184) than in July or September (107 and 106, respectively); however, only 17 species groups were present during June compared to 25 and 26 in July and September, respectively. The average number of invertebrates per cubic meter of vegetation ranged from 844.6 in June to 1,024.5 in July to 1,979.7 in September.

Thrips (Thysanoptera) were the numerically dominant group in samples from the greasewood-sagebrush site in all sampling periods. Leafhoppers were also abundant in all sampling periods; however, species groups differed over the season. Delphacid planthoppers (Delphacidae), abundant homopterans in June, were not captured in July or September. In the order Coleoptera, antlike flower beetles (Anthicidae) comprised 19% of the invertebrates taken in June, 14% in July, with only one specimen taken in September. The remaining abundant beetle family was the snout beetles (Curculionidae) in which the same species groups were present each period. In addition, checkered beetles (Cleridae) were common in September samples. Herbivores were the dominant feeding type in all sampling periods.

2.3.9.3.2 South Slope Pinyon-Juniper Habitat (Site 2) - In pitfall samples from the south slope pinyon-juniper site taken in June, the density was 26.21 invertebrates per m^2, due mainly to the large numbers of Collembola (density = 22.92/m^2). Feeding categories at Site 2 were dominated by saprovores, the primary feeding type of Collembola. The omnivore feeding category consisted of ants (Hymenoptera: Formicidae) while the predator category consisted of spiders (Araneida), pseudoscorpions (Chelonethida) and two families of beetles (Coleoptera: Carabidae, Staphylinidae) (Tables 2.3-281 and 2.3-229).

July pitfall results for the south slope pinyon-juniper site yielded 913 ground-dwelling invertebrates with a density estimate of 8.41 invertebrates per m^2 (Table 2.3-282). Mites (Acari) and ants (Hymenoptera: Formicidae) accounted for 80.72% and 9.31% of the total numbers captured, respectively.

The food habit classification for invertebrates captured in July at the south slope pinyon-juniper site showed 81.1% unknowns, made up mostly of mites (Table 3-7-264). Ants made up the second largest level, omnivore, with 9.3% of the total captures.

In September, 219 invertebrates in eight orders were captured giving an estimated density of 2.90 individuals per m^2 (Table 2.3-283). Ants (Hymenoptera: Formicidae) and spiders (Araneida) were the numerically dominant orders, accounting for 73.88% of the total captures. Twenty-three adult flies (Diptera) were also captured at this site. The numerical dominance of ants and spiders in September at the south-slope pinyon-juniper habitat is reflected in the high percentages of their feeding types. Omnivores, consisting entirely of ants, contained 41% of the total captures and predators, primarily spiders, contained 35.5% (Table 2.3-233).

Over the sampling season, large fluctuations in total captures of two insect orders were the primary changes in the fauna. Collembola accounted for 89.13% of the total number of insects collected in June, dropping to less than 3.0% in July and September. By contrast, numbers of captured Acari went from 5.9% of the total in June to 80.72% in July; Acari was absent in September. Thysanura and Coleoptera demonstrated no large changes in numbers captured over the three sampling periods. Spider (Araneida) captures increased by five times in September over the earlier sampling periods. Ant (Hymenoptera: Formicidae) captures in July and September doubled from those of June. Throughout the sampling season three scorpions and one sun-spider were taken within the grid.

Changes in the dominant feeding type over the summer reflect the total captures of Collembola and Acari each period. In June, 90% of the captures were

Collembola, thus the largest feeding group was saprovore. Acari increased in July samples to become the numerically dominant order, resulting in 81% of the invertebrates from those samples falling into the unknown category. In September, relative abundance of both Acari and Collembola was low, and the omnivore and predator levels contained the largest percentages of the total captures.

In litter samples from the south slope pinyon-juniper habitat, only one sample in June contained more than four invertebrates per kilogram litter (Table 2.3-284) yielding a low overall average of 1.8 invertebrates per kilogram of litter for this site. Actual captures show only three ants taken in five samples (Table 2.3-236) an extremely low figure in view of the fact that duff layers were thick where samples were taken.

Captures of invertebrates per kilogram of litter ranged from 4.5 to 54.2 at the pinyon-juniper/south slope habitat in July for an average of 33.6 and a standard error of 10.8 (Table 2.3-238). Explanations for the large range of habitats for this site are examined. Sample numbers 263, 264, and 267 were taken from pinyon litter while numbers 265 and 266 were taken under juniper (Table 2.3-285). Within these microhabitats, variations in numbers per kilogram litter were small, with a range of 48.7 to 54.2 for pinyon samples and 4.5 to 9.9 for juniper.

Eighty-two percent of the 131 invertebrates captured in July litter samples at the south slope pinyon-juniper site consisted of elongate-bodied springtails (Collembola: Entomobryidae - 31%), mites (Acari - 34%), rove-beetles (Staphylinidae - 8%), and pseudoscorpions (Chelonethida - 9%). Of these groups, Chelonethida was evenly distributed among the microhabitats, with the rest showing a definite preference for litter under pinyon pine (Table 2.3-240). Feeding habit results for July litter captures show three feeding categories with more than 15% of the total captures (Table 2.3-241). The unknown category was made up primarily of mites and the saprovore category was primarily Collembola. Rove beetles (Staphylinidae) and pseudoscorpions (Chelonethida) made up the predator category.

An average of 47.0 invertebrates per kilogram of litter was taken from five litter samples at the south slope pinyon-juniper site in September. This figure is based on a range of 10.9 to 96.9 (Table 2.3-286). The two largest samples were taken under shadscale and greasewood and contained 96.9 and 84.8 invertebrates/kilogram of litter. Low numbers of invertebrates per kilogram of litter were obtained from samples taken under pinyon pine and juniper.

Sixty-eight percent of the 107 invertebrates captured at Site 2 in September were mites (Acari) and these were taken primarily from the shadscale (33 of the 73 mites captured) and greasewood (25 of 73) samples. Other numerically important groups, beetle (Coleoptera) and spider (Araneida) immatures,were found in all five litter samples (Table 2.3-244).

Feeding habits for the invertebrates captured in the south slope pinyon-juniper habitat litter in September reflected the numerical dominance of mites which were designated as unknown in their feeding preferences (Table 2.3-244). Of the remaining feeding types, the predator category contained 13.1% of the total captures, the bulk of which were spiders.

Comparisons of results for all three sampling periods for the litter of the south slope pinyon-juniper habitat show an average of 1.8 invertebrates per kilogram of litter in June increasing to 33.6 in July (Table 2.3-238), and 47.0 in September (Table 2.3-242). During all three sampling periods population trends varied within and between the three microhabitats studied. In pinyon litter, the number of invertebrate captures peaked in July and then dropped off substantially in September. In contrast, juniper and shadscale litter samples increased over the sampling season, although the increase in invertebrates in juniper litter is small compared to that in shadscale litter. The most obvious explanation for these trends lies in the capture numbers of Collembola and Acari in July and September. The highest capture of Collembola occurred in July, primarily in pinyon litter, which accounts for the numbers peak in that litter type. Acari captures increased in July and September in both juniper and shadscale litter.

Of the three species of ants found in the June litter samples, only one species was present in the remaining sampling periods. Three other species were present for both the July (Table 2.3-240) and September (Table 2.3-244) sampling periods. These were elongate-bodied springtails (Entomobryidae), pseudoscorpions (Chelonethida), and barklice (Psocoptera).

Feeding habits of the litter captures at this site reflected the presence or absence of relatively large numbers of Collembola and Acari in the July and September periods.

In herbaceous sweep samples from the south slope/pinyon-juniper habitat in June, 48 invertebrates were captured, representing 21 species groups (Table 2.3-246). Of this total, about one-fifth were from each of two families--plant bugs (Hemiptera: Miridae) and eulophid wasps (Hymenoptera: Eulophidae). Other families with relatively large numbers were Psyllidae and Formicidae, both of which contributed 15% or more to the total captures.

Herbivores were the most abundant group captured in June (48% of the total captures) (Table 2.3-247). Within the herbivore feeding type, Miridae and Psyllidae were the most abundant families, with various other Homoptera also included. Flower feeders, the next most abundant group, was composed of two parasitic Hymenoptera families and one family of flies (Chloropidae). The omnivore category was composed exclusively of ants.

In July at the south slope pinyon-juniper site 80 invertebrates in 15 species groups were captured (Table 2.3-248). Sixty percent of the total captures were contained in two families, globular springtails (Sminthuridae) with 27.5% and leafhoppers (Cicadellidae) with 32.5% of the total. Acari made up 16% of the total.

As both of the numerically abundant groups are plant sap feeders, the herbivore level at the south slope pinyon-juniper site contains over 60% of the total captures (Table 2.3-249). The second largest feeding type is the unknown (16.3%) which is made up of mites (Acari).

In September, 35 species groups yielded 156 invertebrates in herbaceous sweep samples at the south slope pinyon-juniper site (Table 2.3-250). Numerical dominants were leafhoppers and aphids (Aphididae) which contained 42% and 20% of the total captures, respectively. Eulophid wasps (Eulophidae) was the only other family which contained greater than 5% of the total captures.

The majority of the herbivores were in the two numerically dominant families, Cicadellidae and Aphididae (Table 2.3-251). Both are plant sap feeders. The second most abundant feeding type, flower feeders, was made up of adult flies (Diptera) and wasps (Hymenoptera).

Over the entire season, total captures were greatest in September as was the total number of species groups. Of the numerically dominant families in June samples, only the ants (Formicidae) and eulophid wasps (Eulophidae) were present in all sampling periods. The parasitic wasps are short-lived individuals. Neither of the leafhopper species groups common in July was present in September, but the second largest group, Sminthuridae, was found in small numbers in the latter sampling period.

Herbivores were the abundant invertebrate feeding type captured during all sampling periods in the south slope pinyon-juniper habitat. The abundant taxa in the herbivore category varied from period to period, with Miridae and Psylidae in June, Sminthuridae and Cicadellidae in July, and Cicadellidae and Aphididae in September. Dipteran and hymenopteran flower feeders, represented by a variety of families and species groups, were relatively abundant in all sample periods. Omnivores, unknowns, or predators were also relatively abundant in one or more sampling periods.

In beating samples taken from pinyon pine at the south slope pinyon-juniper habitat in June, 32 invertebrates were captured in eight species groups. Ants and mites accounted for 68% of the captures.(Table 2.3-252).

Feeding habits reflect the numerical dominance of ants and mites, with 50% omnivores and 20% unknowns.(Table 2.3-253).

Beating samples from pinyon pine at the south slope pinyon-juniper site in July contained 142 invertebrates in 27 species groups (Table 2.3-254). Numerically dominant groups included a species group of immature plant bugs (Miridae) with 32% of the total captures and two species groups of thrips (Thysanoptera) with 25%. Of the total captures, half of the species encountered were in the order Hymenoptera; three-quarters of these were parasitic wasps.

Herbivores were the numerically dominant feeding type with 65.2% of the total captures, including both of the most abundant groups. The second largest group, predators, consisted of individuals from Araneida, Hymenoptera, Diptera and Coleoptera. (Table 2.3-255).

In September, 92 invertebrates representing 18 species groups were captured in beating samples from pinyon pine at the south slope pinyon-juniper habitat. Over half of these were of one species group of globular springtails (Sminthuridae). None of the remaining groups contributed more than 7% of the total captures. (Table 2.3-256).

Sminthuridae made up most of the captures in the herbivore feeding category in the September beating samples (Table 2.3-287). Predators, which contributed 19.6% of the total captures, were all spiders (Araneida).

Capture totals and numbers of species groups in the south slope pinyon-juniper beating samples from pinyon pine peaked in the July sample. Three species groups were present in both June and July samples. Four species groups were present in both July and September samples, including Sminthuridae which was the most abundant family in September. The Miridae nymph collected commonly at this site in July was not present in June or September samples.

Feeding habit percentages for each sampling period reflect the low total captures of herbivores in June. Ants and mites, which made up the bulk of the abundant feeding types in June, were not captured in substantially smaller numbers in July or September, but different groups of herbivores with relatively high capture totals in July and September decreased the relative abundance of total captures of omnivores and unknowns in the latter two periods.

Beating samples from juniper at the south slope pinyon-juniper site (Sample 2J) in June contained 122 invertebrates in 11 species groups (Table 2.3-252). Eighty-six percent of the captures were contributed by one species group of plant bug (Miridae). This is reflected in the percentage of total numbers in each feeding type where herbivores make up 87% of the captures (Table 2.3-253). Miridae are plant sap feeders.

In beating samples from juniper (Sample 2J) in July, a total of 97 invertebrates in 21 species groups was taken (Table 2.3-254). Dominant groups at this site were Sminthuridae with 32% of the total, Miridae nymphs with 12%, Dictynid spiders with 10% and psyllids (Psyllidae) with 9%, and Acari with 12% of the total captures.

Feeding habits show 60.7% of all captures from juniper at this site in July are herbivores, primarily Sminthuridae, Miridae, and Psyllidae (Table 2.3-255). The second most abundant feeding type, predator, consisted primarily of dictynid spiders.

September results for beating samples from juniper at the south slope/pinyon-juniper habitat (2J) had 10 species groups containing 17 individuals. Only two groups, mites (Acari) and dictynid spiders (Dictynidae), had more than two individual captures (Table 2.3-256). Nine herbivores were taken including two larval specimens of a conifer sawfly (Diprionidae), giving a total of 56.3% of the captures in the feeding type (Table 2.3-287).

Over the season, the most significant change in the invertebrate fauna captured was the loss of the large Miridae population present in the June samples. This group was the primary contributor to the peak in total numbers occurring in June. Five species groups were present in both the June and July results, although only one was an insect (a bark louse - Psocoptera). The rest were mites and spiders. September results contained a small number of the springtails which were common in July, and one specimen of an abundant species group of plant bug (Miridae) found in June.

Herbivores were the most numerous invertebrates captured in all three sampling periods at Site 2J. In June, the herbivore feeding type was primarily one species group of Miridae, while in July, a group of three families contributed to the total. In September, the herbivore level was made up of several groups with small total captures.

Aerial sweep samples from the foliage of pinyon pine at the south slope pinyon-juniper habitat (Site 2) in June contained only seven invertebrates in seven species groups (Table 2.3-257). Predators were the largest feeding type, containing three individuals, while the herbivore and flower feeder level each contained two (Table 2.3-258). Only one family was found only in pinyon pine at this site, Agromyzidae, a leaf-miner fly which is normally associated with deciduous species.

Aerial sweeps from pinyon pine at Site 2 in July contained 31 individuals in 15 species groups. Over half the total numbers were in the families of checkered beetles (Cleridae) and eulophid wasps (Eulophidae) (Table 2.3-259).

Twelve invertebrates, including the abundant family of beetles (Cleridae), were considered predators giving this feeding type the largest percentage of total captures at 38.7 (Table 2.3-260). The remaining family considered abundant (Eulophidae) is a parasitic wasp family whose adults make up two-thirds of the second largest feeding type, flower feeders.

In September, 38 individuals in 21 species groups were present in the aerial sweep sample from pinyon pine at the south slope/pinyon-juniper site, one-third

of which were plant bugs (Miridae) (Table 2.3-261). No other family contributed more than three individuals to the sample except Eulophidae, which was also a common family in July.

A combination of four Homoptera families and the abundant hemipteran family, Miridae make up the bulk of the 63.2% herbivores taken in aerial sweeps at Site 2 in September (Table 2.3-262).

Over the season, aerial sweep samples from pinyon pine at the south slope pinyon-juniper habitat showed a numerical peak in September. Abundant families each period varied with one exception, Eulophidae, which was common in July and September, but with different species groups making up the total each time.

Herbivores were the abundant feeding type in sweep samples from pinyon pine only in September. In June and July, predators were most common, with different contributing groups in each period.

Aerial sweep samples from the foliage of juniper at the south slope/pinyon-juniper site (Site 2) contained 95 invertebrates in eight species groups in June (Table 2.3-257). Eighty-seven percent of the total captures were of one species group in the family Miridae, with globular springtails (Sminthuridae) the only other group with more than two individuals. These two groups and one moth larvae were the only herbivores in the samples but represent 95% of all captures (Table 2.3-258).

Fifty sweeps from juniper foliage in July at Site 2 show 39 invertebrates in 17 species groups (Table 2.3-259). Nearly half of the total captures and number of species groups belong to a variety of parasitic wasp families (Hymenoptera). The majority of the remaining total numbers are contained in Sminthuridae and Miridae.

Despite the fact that three parasitic wasp families contained greater than 10% of the total captures, the herbivore level is the most abundant feeding type (Table 2.3-260). Both of the most abundant families are included in this group, along with individuals from four other orders. The flower feeder level consisted of

most of the Hymenotpera. The last feeding type, predator, contained over 15% of the total captures and consisted of a Hymenoptera famioy and a spider family.

September results from aerial sweeping of juniper foliage contained 43 invertebrates in 13 species groups, the second largest total captures in aerial sweeps from all sites sampled in September. Plant bugs (Miridae) and froghoppers (Cercopidae) accounted for 32 of the 43 total captures (Table 2.3-261).

The abundance of herbivores in the feeding habit results for September samples at Site 2, 83.7% of the captures (Table 2.3-262), reflects the capture totals of Miridae and Cercopidae.

Over the season, invertebrate captures from aerial sweeps of juniper foliage at the south slope pinyon-juniper habitat fluctuated, with the highest total in June, and the lowest in July. The abundant plant bug species group from June was also relatively abundant in July, but absent in September samples, although another species group of the family was present. Only globular springtails (Sminthuridae) were present in all sampling periods.

Herbivores were the numerically dominant invertebrates in all periods, usually with either Miridae or Sminthuridae as one of the major components. In July, there were a large number of parasitic wasp adults which contributed to the large percentage of flower feeders found only in this period.

The Malaise trap in the south slope pinyon-juniper habitat (Site 2) contained an estimated 2,872 invertebrates after 10 days in June (Table 2.3-263). Six groups contributed a total of 62% of the total captures, including five families of flies (Diptera). The most abundant groups, anthomyiid flies (Anthomyiidae) and a variety of adult moths (Lepidoptera), each contained 13.6% of the captures.

Flower feeders dominated the Malaise captures at Site 2 in June, with the bulk of these in the abundant groups of adult moths, Chironomidae, and Sciaridae. Only one other feeding type, unknowns, contained greater than 10% of the captures, with nearly three-fourths of this total in one family - Anthomyiidae. (Table 2.3-264).

July results for Malaise trap captures from the south slope pinyon-juniper habitat contained 636 invertebrates in 41 species groups (Table 2.3-265). Five groups each contained greater than 5% of the captures, led by a variety of adult moths which made up 27.6% of the total, gall midges with 16.3%, a variety of Homoptera with 10%, and anthomyiid flies and tiphiid wasps (Tiphiidae) with over 5% each. In July less than one-half of the total species groups captured were in the order Diptera.

Feeding habit results for invertebrates captured in the Malaise trap at the south slope pinyon-juniper habitat in July show flower feeders as the largest group with 50.9% of the captures. Over one-half of this total were adult moths, the only abundant group in this feeding type. Unknowns, the second largest group with 28.9% of the total captures, consisted primarily of Cecidomyiidae and Anthomyiidae. (Table 2.3-266).

In September, results at Site 2 for Malaise trap sampling revealed 424 invertebrates in 24 species groups (Table 2.3-267). Of this total, four groups contain over 10% of the captures, led by anthomyiid flies with 22.6%, a variety of homopterans with 17.9%, a variety of adult moths with 15.1% and scarab beetles (Scarabaeidae) with 11.3%. These groups show a combined total of 66.9% of all captures. Fourteen of the 24 species groups are contained in 10 families of flies (Diptera).

Feeding habits for the captures at Site 2 in September show flower feeders as the abundant feeding type with one numerically abundant group, adult moths, and a variety of Hymenoptera and Diptera included. The second largest group, unknowns, was primarily anthomyiid flies (Table 2.3-268).

Over the season, capture totals decreased from 2,872 invertebrates in June to 424 in September. Anthomyiidae was the most abundant family taken all season, with one species group abundant in June, a different one in July, and both present and abundant in September. In all, 16 species groups present in June were also found in July, including a fall midge (Cecidomyiidae) abundant in both periods. Eight of these groups were also present in September with only the anthomyiid flies considered abundant.

Trap D-Vac samples were taken from shadscale (Atriplex confertifolia) in the south slope pinyon-juniper habitat. In June, the average for five shadscale plants sampled was 277.7 invertebrates per cubic meter of plant with a standard error of 100.2 (Table 2.3-270).

Variation in the number of invertebrates per cubic meter of shadscale at the south slope pinyon-juniper site ranged from 67.3 to 611.2. The average for the five shadscale plants was 277.7 invertebrates per cubic meter with a standard error of 100.2 (Tables 2.3-288 and 2.3-270). Forty-three invertebrates in 14 species groups were captured at this site with a species group of Tortricoidea larvae (Lepidoptera) making up over one-third of the total captures (Table 2.3-271). Other abundant groups included scale insects in the superfamily Coccoidea and leafhoppers (Cicadellidae), each with eight individuals. Ninety-three percent of all captures were herbivores (Table 2.3-272).

Sixty invertebrates were captured in five samples from shadscale at the south slope/pinyon-juniper site in July. Results are presented in Tables 2.3-274 and 2.3-289. The number of invertebrates per cubic meter of plant averaged 709.2 with a standard error of 377.1.

Sixty percent of the invertebrates captured were leafhoppers (Cicadellidae) and midges (Chironomidae) (Table 2.3-275). Both families were picked up on all plants sampled, and the majority of specimens within each family belonged to one species group. In all, 21 species groups were taken from shadscale foliage at this site in July.

Eighty-eight percent of the total captures were comprised of invertebrates in two feeding types, herbivores with 40.0% and flower feeders with 48.3% (Table 2.3-276). The abundant families made up the bulk of the two feeding types with leafhoppers containing 14 of the 24 herbivores and Chironomidae containing 22 of the 29 flower feeders (Table 2.3-275).

In September, the number of invertebrates per cubic meter averaged 2,035.8 with a standard error of 1,147.1 (Tables 2.3-290 and 2.3-278). Actual captures totaled 24, with the invertebrates relatively evenly divided among four samples.

The numerically dominant family was an unknown homopteran in the superfamily Coccoidea, which contributed seven individuals (29% of the total), six of which were in one sample (Table 2.3-279). Two species groups of leaf beetles (Chrysomelidae) and three species groups of leafhoppers (Cicadellidae) made up the next most abundant taxa.

The eight invertebrates in the Berlese calibration sample were all leafhoppers, an indication that this family is numerically more important than results show. Feeding habit percentages reflect the feeding types of the abundant taxa. All were herbivores which made up the bulk of the 87.5% of the total captures (Table 2.3-280).

Over the sampling season at the south slope pinyon-juniper habitat, the average number of invertebrates per cubic meter of shadscale plants increased from 277.7 in June to 2,035.8 in September; however, total captures were highest in July (60) and dropped to 24 in September. The numerically dominant group which appeared in all samples was Cicadellidae (leafhoppers). Scale insects (superfamily Coccoidea) were important numerically in June and September, but were comprised of two distinct and different species of active immatures. The last abundant group captured in June, moth larvae in the superfamily Tortricoidea, was caught in relatively large numbers but was absent from later samples.

In July, midges (Chironomidae) were the most abundant group sampled. The three species groups captured in July were not present in samples from shadscale in June or September.

In addition to previously mentioned families, September samples contained two abundant species groups of leafbeetles (Chrysomelidae), neither of which was present prior to September.

Total captures at this site were comparable to other sites in all sampling periods, including the second highest total in July. In July, Site 2 contributed 21 species groups.

2.3.9.3.3 North Slope Pinyon-Juniper Habitat (Site 3) - Results for the north slope pinyon-juniper ground-dwelling invertebrates sampled in pitfalls in June show 387 individuals captured from eight orders. The total calculated invertebrate density at Site 3 was 0.60 individuals/m^2 (Table 2.3-291).

Highest total captures were in the order Collembola (240 individuals) followed by Coleoptera (59 individuals) and ants (39 individuals).

Feeding habit results for pitfall captures at the north slope pinyon-juniper habitat showed 62% saprovores, all litter-dwelling Collembola. Predators, which consisted of all of the spiders (Araneida) and beetles (Coleoptera), were the next abundant feeding category.

Twelve hundred and two invertebrates (in nine orders) were captured in pitfalls at Site 3 (north slope pinyon-juniper) in July. Acari was the most numerous group captured with 600 individuals (diversity = 5.14/m^2). (Table 2.3-292).

The unknown feeding category dominated the north slope pinyon-juniper ground-dwelling fauna. This category was comprised entirely of mites (Acari) and made up 50.2% of total captures. The next most abundant feeding category was saprovores with 33.9% of the total captures, made up primarily of Collembola. All of the ants were omnivores. Beetles (Coleoptera) contributed to the saprovore, herbivore, and predator levels.

In September, 425 individuals in nine orders were captured in the north slope pinyon-juniper habitat (14.65 individuals per m^2) (Table 2.3-293). The largest order, Acari, accounted for 80% of the total captures.

The saprovore level contained only 4.0% of the total captures and included Collembola, Phalangida, and some Coleoptera. The predator feeding category was composed of spiders (Araneida), beetles (Coleoptera), and one centipede (Geophilomorpha).

Over the entire sampling period, total captures went from 387 individuals in June to 1,202 in July and 423 in September.

The numerically dominant groups were Collembola and Acari. Collembola was the dominant group captured in June (62% of the total captures). Acari accounted for 80% of the total captures in September. In July, Acari accounted for almost 50% and Collembola over 33% of the total captures.

The dominant feeding type varied for each sample period relative to the invertebrate group which was numerically dominant in the samples. In the cases of both Collembola and Acari, their respective feeding habits (saprovore and unknown) contained relatively few individuals of any other order, and as a result the percentage of total captures in the feeding types saprovore and unknown are almost identical to the percent relative abundance of Collembola and Acari.

Results of the litter D-Vac sampling at the north slope pinyon-juniper habitat are similar to those from the south slope pinyon-juniper site in June in that small numbers of invertebrates per kilogram of litter were captured in all samples (Table 2.3-294). The average was 5.0 invertebrates per kilogram of litter (Table 2.3-235). Of the five samples, three were taken from pinyon pine litter and contained 14.5, 0.0 and 9.3 invertebrates per kilogram of litter. The remaining two samples were taken from the juniper duff and contained 0.0 and 3.1 invertebrates per kilogram litter.

Feeding habits for the 13 invertebrates taken in litter samples at the north slope pinyon-juniper site in June showed the predator category as the most abundant, containing four beetles and one spider (Table 2.3-237).

The number of invertebrates per kilogram of litter ranged from 20.4 to 82.6 in the north slope pinyon-juniper habitat in July (Table 2.3-295). The average number per kilogram of litter derived from these five samples is 61.3 with a standard error of 11.8. As at Site 2, there are large differences in total invertebrate numbers based on the microhabitat sampled. Pinyon pine litter yielded 80.9, 73.3 and 82.6 invertebrates per kilogram of litter while only 10.2 and 24.8 invertebrates were found per kilogram of juniper litter.

Variation in the numbers of invertebrates in pinyon samples was minimal. The large variation in juniper samples may be explained by looking at the fauna captured. In the juniper sample with the largest number of invertebrates, 43 of 45 invertebrates captured were ants (Hymenoptera: Formicidae), which indicates that this sample was probably taken over the opening of an ant nest.

In all, a total of 238 invertebrates in 23 species groups were captured from litter samples at the north slope pinyon junipersite in July. Litter samples at this site contained three numerically dominant groups including two families of Collembola with 28% of the total captures, three species of ants (Hymenoptera: Formicidae) with 43% of the total captures, and a variety of mites (Acari) with 12% of captures (Table 2.3-240). All Collembola and most of the Acari came from pinyon litter, while ants were found in all samples.

Invertebrate food habitat classification for the north slope pinyon-juniper habitat reflects the large number of ant captures. Accordingly, 43.3% of the invertebrates captured were classed as omnivores (Table 2.3-241). The next most abundant food category, saprovore, was composed primarily of Collembola, while the third, unknown, was primarily mites. The last remaining abundant level, predator, was composed of spiders, pseudoscorpions, and stilletto fly larvae (Therevidae). In September, an average of 44.7 invertebrates per kilogram of litter was taken from the samples at the north slope pinyon-juniper habitat (Table 2.3-242). Five samples ranging from 3.9 to 111.2 invertebrates contributed to this average, and to the standard error of 24.2.(Table 2.3-296).Two samples were taken in duff under pinyon pine, and contained 96.3 and 111.2 invertebrates per kilogram of litter respectively. The remaining three samples were taken in juniper duff and all contained less than eight invertebrates per kilogram of litter (Table 2.3-297).

Ants (Hymenoptera: Formicidae) and mites (Acari) made up 69% of the invertebrates captured in September (Table 2.3-244). Other relatively abundant groups were springtails (Collembola: Isotomidae) and bark lice (Psocoptera). All of the mites and Collembola were in one pinyon litter sample, and the ants were in the other. This concentration of ants in one sample is again indicative

of a nest located beneath the duff within the area vacuumed. Omnivores were the most abundant invertebrates captured at the north slope pinyon-juniper in September (Table 2.3-245); all were ants. The second largest feeding category, unknown, consisted entirely of mites. The remaining two feeding levels, saprovores and predators, were also abundant in samples.

There was an increase in the average number of invertebrates per kilogram of litter over the summer, from 5.0 in June to 44.7 in July (Table 2.3-238) to 61.3 in September (Table 2.3-242). In the pinyon pine duff samples, ranges increased from less than 15.0 in June to 70.0-80.0 in July and over 95.0 in September, while in juniper samples, numbers increased from less than 4.0 in June to over 20.0 in July, and down to less than 8.0 individuals per kilogram of litter in September.

In pinyon pine duff samples, the increased numbers in July from June are primarily attributed to increases in captures of one ant species also found in June, and to an abundance of Collembola not present in the June sampling period. September samples also contained high numbers of an ant species found in previous sampling periods, but Collembola numbers were much reduced.

Juniper litter sample peaks in July are based on increases in ant (Hymenoptera: Formicidae) captures in both samples (Table 2.3-240). The three major groups encountered in the July samples, Collembola, Acari, and Formicidae, were not abundant in June. The Collembola population peaked in July and was still present in September. Acari increased from 0 in June to 57 individuals per kilogram of litter in September samples, while ants peaked in numbers in July and were less abundant in September although still quite common. The results for Formicidae are biased by the presence of ant nests within the sample boundary in both the July and September samples. A comparison of species present in litter samples between June and July shows that four of the 10 species taken in June were present and more abundant in the July samples. Seven species present in September samples were also found in July samples, and three of the four species common during the first two sampling periods were also present in September. These three species included an ant (Hymenoptera: Formicidae), a beetle (Coleoptera: Curculionidae and a ground beetle larvae (Coleoptera:

Carabidae). Spider families and mites were present throughout the three sample periods. The predator feeding category was the most abundant in June samples. In July and September omnivores (primarily ants) were the most abundant feeding group. The relative importance of other levels, specifically saprovore and unknown, are based almost wholly on the number of Collembola and mites. Consequently, saprovores were more abundant in July, while unknowns were more abundant in September.

Herbaceous sweep samples from the north slope pinyon-juniper habitat in June had the second lowest total captures taken in any habitat or sampling period throughout the season (Table 2.3-246). Of the 29 invertebrates in 16 species groups, 28% were ants, and 20% each were delphacid planthoppers (Homoptera: Delphacidae) and leafhoppers (Cicadellidae). No other group contained more than two individuals.

The dominant feeding category in the June herbaceous sweep samples was herbivore, including both of the abundant Homoptera families listed above, plant bugs (Miridae), a short horned grasshopper (Acrididae) and two beetles (Table 2.3-247). Ants made up the second most abundant feeding type, omnivores, and several fly and wasp families contributed to the third largest feeding type, flower feeders.

Twenty species groups contributed 35 individuals in herbaceous sweep samples at the north slope/pinyon-juniper habitat in July (Table 2.3-248). Of these 35 specimens, 31% were ants (Formicidae), making this by far the most abundant family captured. Other abundant types included globular springtails (Sminthuridae) and leafhoppers (Cicadellidae), both with greater than 14% of the total captures.

The abundance of ants in the herbaceous sweep sample from the north slope pinyon-juniper habitat made the omnivore category the second largest in September. The remaining abundant families contributed to the herbivore level, the most abundant feeding type at the north slope pinyon-juniper site in July (Table 2.3-249).

In September, 90 individuals representing nine species groups were captured from the north slope pinyon-juniper habitat (Table 2.3-250). Eighty percent of this total was contributed by one species group of psyllids (Homoptera: Psyllidae).

Herbivores contained 93.3% of the total captures in September (Table 2.3-251). Seasonal trends in total captures peaked in September with 90 individuals, while the number of species groups was largest in the early periods and showed a low of nine in September. Of the abundant families present in June, all three were present in July, when both leafhoppers and ants were abundant. The remaining abundant group in July, globular springtails (Sminthuridae), not present in the June or September samples. Three species groups captured in July were also captured in June including the two species of ants which made up the abundant family in the early period. No species groups were found in both the July and September samples. Overall, the north slope pinyon-juniper site was consistently low in both total invertebrate numbers and diversity (number of species groups). Herbivores were the dominant invertebrates in all sample periods in the herbaceous stratum of the north slope/pinyon-juniper habitat.

Beating samples from pinyon pine at the north slope pinyon-juniper habitat (Site 3P) in June yielded only 12 invertebrates in seven species groups (Table 2.3-252). Of this total, 50% of the captures were evenly divided among crab spiders (Thomisidae) and assassin bugs (Reduviidae). Only one other species group contained greater than one individual, an unknown hemipteran nymph. Feeding habit percentages of total captures show 67% predators, including both of the abundant families listed above (Table 2.3-253).

Results of beating two pinyon pine trees at Site 3 in July showed 124 invertebrates representing 22 species groups (Table 2.3-254). Just less than half of the captures were the same Miridae nymph which was also dominant on pinyon pine at Site 3P in July. Three other groups contained 10% or more of the total captures - Thysanoptera, Cicadellidae, and Aphididae. Of the 22 species groups present, one-third are parasitic wasps. One hundred of the 124 captures from pinyon pine of the north slope pinyon-juniper habitat in July were herbivores, giving a percentage of 80.6 (Table 2.3-255).

This feeding habit includes all of the numerically abundant groups mentioned above.

In September, 27 individuals in 15 species groups were captured in beating samples from pinyon pine at Site 3P (Table 2.3-256). The dominant family in terms of total captures and number of species groups was the family of assassin bugs (Reduviidae), followed closely in total numbers by an unknown family of spiders. Of the 27 total captures, just under one-half were Araneida.

The predator level was the most abundant feeding type in the September beating samples with 81.5% of the total captures, including the spiders and assassin bugs (Reduviidae), as well as ladybird beetles (Coccinellidae) and a brown lacewing (Neuroptera: Hemerobiidae) (Table 2.3-288).

Total captures in beating samples from pinyon pine at the north slope/pinyon-juniper habitat peaked in July due primarily to the abundance of a Miridae nymph, which was not picked up in June or September. Only three families were present throughout the season in the juniper beating samples, two spider families, and the assassin bugs (Reduviidae), which were present as immatures in June and adults in September. Changes in dominant feeding types are primarily related to the large number of herbivorous miridae found in July. In both June and September samples, the predator level consisted of basically the same groups and total captures.

Beating samples from juniper at the north slope pinyon-juniper habitat (Site 3J) in June contained 17 invertebrates in nine species groups (Table 2.3-252). Of this total, four were the same species group of plant bugs (Miridae) found in abundance in juniper samples at the south slope pinyon-juniper site. No other family contributed more than three invertebrates to the total captures; however, the order Araneida contained six individuals for greater than one-third of the captures.

Fifty-three percent of the captures were herbivores, including Miridae, making this feeding type the most common in the June juniper beating samples at Site 3J (Table 2.3-253). Six of the remaining eight invertebrates were predators

(all spiders), making this the second most abundant feeding type with 35% of the total captures.

Juniper beating samples at Site 3J in July revealed 13 species groups containing 35 individuals, both low totals for all beating samples in the July sampling period (Table 2.3-254). Numerically dominant groups included mites (Acari) and snout beetles (Curculionidae), which together accounted for almost half of the total captures. Other groups with greater than 10% of the total captures were Miridae and dictynid spiders (Dictynidae), each with five individuals captured.

Five of the feeding type categories which describe the fauna captured in beating of juniper at the north slope pinyon-juniper site in July contain over 5% of the total captures (Table 2.3-255). Herbivores were most common, with five orders contributing to the 15 captures, while the next two most abundant feeding types, unknown and predator, each contained only one group (Acari and Araneida, respectively).

September results from beating of juniper at Site 3J showed 31 specimens in 14 species groups (Table 2.3-256); 16 specimens were included in two species groups of barklice (Psocoptera). Only two other families contained more than one individual, Sminthuridae (Collembola) and Dictynidae (Araneida).

Saprovore, the feeding type of the abundant Collembolan family, contained 51.6% of the total captures in September samples of juniper beating at Site 3J (Table 2.3-262). The second most abundant feeding type, predator, was comprised primarily of spiders.

Seasonal trends in faunal characteristics of invertebrates captured by beating juniper trees in the north slope pinyon-juniper habitat revealed no peak in total captures, with essentially the same number of invertebrates taken each period. Overall, captures from beating juniper at Site 3J were very low in numbers and species groups relative to other sites.

Over the season, only one insect species group (in Curculionidae) was present in both early periods (June and July), along with two families of spiders. September results also contained the two spider families (Dictynidae and Thomisidae) found in the previous two periods as well as one species group of Psocoptera. Only two specimens of the latter species group were captured in July, but the group was numerically dominant in September.

The foliage of pinyon pine at Site 3 (north slope pinyon-juniper habitat) yielded five invertebrates in three species groups in June aerial sweeps (Table 2.3-257). Three of these individuals were ants, giving a percentage of 60 for the omnivore feeding type (Table 2.3-258).

In July, aerial sweep samples from pinyon at Site 3 contained 52 individuals, which were relatively evenly distributed among 28 species groups (Table 2.3-259). The largest family (Aphididae) contained only 13% of the total captures and was the only family with over 10%. Hymenoptera contributed more than 30% of the species groups captured, but made up less than one-fourth of the individual captures.

July sweep samples from pinyon pine reveal three feeding types with over 20% of the captures (Table 2.3-260). The numerically dominant type, herbivore, contained a variety of families from Hemiptera, Homoptera, Coleoptera and Lepidoptera. This is also true of the predator and flow feeder levels, each of which contain members of three orders.

September sweep samples from pinyon pine foliage at the north slope pinyon-juniper habitat contained 13 species groups with 24 individuals, none of which were plant bugs (Miridae) (Table 2.3-261). The second largest family, pteromalid wasps (Pteromalidae), contained six individuals in five species groups. Two spider families were the only others contributing more than one individual. Pteromalidae contained over one-third of the 13 species groups and was the only family with more than two species groups.

Feeding habit results show two types with at or near 50% of the total captures (Table 2.3-262), led by the herbivore level with 12 individuals of which nine

were plant bugs (Miridae). The other numerically dominant feeding type, predator, contains spiders and pteromalid wasps.

Over the season, total captures peaked in July after only five in June. The abundant families in September were also present in relatively large numbers in July, although the species groups changed. Of the remaining nine groups in July samples, which contained over 5% of the total captures, only two were present in September.

Herbivores were the most abundant feeding category in July and September. Predators were the second largest feeding category in all three sampling periods and consisted of different spider families and different species groups of Pteromalidae.

In aerial sweeps from juniper in the north slope pinyon-juniper habitat, 20 invertebrates in six species groups were captured in June (Table 2.3-257). Of this total, greater than one-half were a species group of plant bug (Miridae). Seven of the remaining eight invertebrates captured were spiders. The feeding types of these two abundant groups were herbivores and predators, contributing 60% and 35% of the total captures, respectively (Table 2.3-258).

Aerial sweeps from juniper foliage in July contained 25 invertebrates (Table 2.3-259). Curculionidae was the largest family with four individuals in one species group, although the parasitic wasp families taken as a group contained nearly one-half of the total captures and over one-half of the species groups. As a result of numerical dominance of Hymenoptera, the flower feeding types was most abundant (Table 2.3-260).

September results for sweep samples of juniper foliage at the north slope pinyon-juniper site show 29 invertebrates in 12 species groups (Table 2.3-261). Numerically dominant groups were Miridae and Eulophidae. Pteromalidae contained 17% of the total captures, giving a combined total of 65% for the three families. Feeding habits for the invertebrates captured included the herbivore, flower feeder and predator levels, each with over one-fourth of the total captures (Table 2.3-262).

Over the season, sweep captures from juniper at the north slope pinyon-juniper site were relatively constant, ranging from 20 in June to 29 in September. The immature Miridae, abundant in June, was not captured in July or September; however, the Miridae species group found in July was one of the most abundant groups in September.

Herbivore was the numerically dominant feeding category in June. Predators were relatively abundant in all periods and the most abundant category in July. In September, flower feeders were most common due primarily to parasitic wasp captures which were also common in July.

Malaise trap samples from the north slope pinyon-juniper habitat contained an estimated 7,488 invertebrates in June (Table 2.3-263). Only two groups, midges (Chironomidae) and stilletto flies (Therevidae), contained greater than 10% of the total captures, but seven other groups each contributed over 5% of the total captures. These included a group of unknown adult moth species, three fly families (Mycetophilidae, Sciaridae, and Cecidomyiidae), and three Hymenoptera families (Braconidae, Andrenidae, and Apidae).

Of the abundant groups, all but Therevidae and Cecidomyiidae were flower feeders, accounting for most of the 69% of total captures in this feeding category.

Malaise trap captures from this site in July contributed 1,020 invertebrates in 67 species groups (Table 2.3-265). Sixty-two percent of the total captures were contributed by five groups of insects including 22% unknown adult moths, 15% gall midges (Cecidomyiidae), 11% anthomyiid flies (Anthomyiidae), 8% Chironomidae and 6% sphecid wasps (Sphecidae). Diptera dominated capture numbers and contributed nearly one-half of the species groups.

Flower feeders made up 59.6% of all invertebrates captured (Table 2.3-266), with over one-half in the moth, chironomid, and sphecid wasp taxa. The 28.2% of the total captures in the unknown feeding category were almost entirely gall midges (Cecidomyiidae) and anthomyiid flies (Anthomyiidae).

Malaise trap captures from the north slope pinyon-juniper site in September consisted of 476 insects in 43 taxa (Table 2.3-267). A variety of Homoptera and three species groups of anthomyiid flies were common in Malaise samples. Other taxa included a group of moth species with 9% of the total captures, and two fly families, Cecidomyiidae and Tachinidae, with 9% and 7% of the captures respectively. Hymenoptera contributed more than 10% of the total captures.

Diptera and Hymenoptera species groups made up the remainder of the flower feeders. In the unknown feeding category, Anthomyiidae and Cecidomyiidae made up the majority of the captures. The Homoptera group dominated the herbivore feeding category.

Total estimated invertebrate captures went from 7,488 in June to 476 in September. Of the abundant groups in June, the gall midges (Cecidomyiidae) and one other species of midge (Chironomidae) were present and abundant in July. An additional six species were also present in June and July. The September samples also contained the same seven taxa as did June and July samples, with gall midges (Cecidomyiidae) still abundant. One species of anthomyiid fly which was relatively abundant in July was the most abundant species group in September samples.

Trap D-Vac samples were taken from sagebrush at the north slope pinyon-juniper site. In June, the five trap D-Vac samples taken from sagebrush at the north slope pinyon-juniper site contained an average of 2,809.4 invertebrates per cubic meter and a standard error of 2,133.6 (Tables 2.3-297 and 2.3-270). Twenty-two invertebrates in 12 species groups were taken, with only two species groups containing more than one individual (Table 2.3-271). Nearly one-half of the total captures were in one species group of Curculionidae. The remaining abundant group was larvae of the superfamily Tortricoidea (Lepidoptera), which contained two individuals.

Only two feeding categories, herbivore and predator, were captured at the north slope pinyon-juniper site in June (Table 2.3-272). The most abundant feeding category, herbivore, made up 83% of the total captures.

Sixteen invertebrates were captured by trap D-Vac of sagebrush at the north slope/pinyon-juniper site in July (Table 2.3-298). Estimates of the number of invertebrates per cubic meter of plant for the five samples averaged 106.9 with a standard error of 26.2 (Tables 2.3-274).

Sixty-nine percent of the invertebrates captured from sagebrush were in three families: globular springtails (Sminthuridae), snout beetles (Curculionidae), and platygasterid wasps (Platygasteridae) (Table 2.3-275).

Fifty-six percent of the total captures were herbivores, most of which were springtails and snout beetles (Table 2.3-276). Flower feeders, the second most abundant feeding type, were composed mainly of members of the family Platygasteridae.

In September, invertebrates per cubic meter of sagebrush at the north slope pinyon-juniper habitat averaged 12,899.7 with a standard error of 6,900.2 (Table 2.3-299). Actual capture totals ranged from one to 11 invertebrates per plant. Three of the six species groups captured contributed 86% of the total captures, most of which were scale insects (Table 2.3-279). Snout beetles (Curculionidae) and stilletto fly larvae (Therevidae) were also abundant.

Two feeding types, herbivore and predator, were the only invertebrates captured in trap D-Vac samples from sagebrush at the north slope pinyon-juniper site (Table 2.3-280). The numerically dominant group, herbivores, contained 75% of the total captures, and included Coccoidea and Curculionidae. Stilletto fly larvae made up the bulk of the predator feeding category.

Over the summer, the estimated averages of invertebrates per cubic meter of sage went from 2,809 to 107 to 12,900, although actual captures varied only from 23 to 16 to 28.

Snout beetles (Curculionidae) were the only group abundant in all sampling periods, although the species groups contributing most to the families' members were different each sampling period.

2.3.9.3.4 Sagebrush Habitat (Site 4) - Beating and aerial sweeps were not taken at this site due to a limited tree stratum in this upland sagebrush habitat.

The largest number of invertebrates captured in pitfall samples in June was in the sagebrush habitat, where 5,313 invertebrates representing seven orders were taken (Table 2.3-300). Collembola demonstrated a high capture rate. Large numbers of individuals in the orders Acari, Araneida, and Hymenoptera were also captured.

The numerically dominant feeding category was saprovore (92%), a reflection of the large numbers of Collembola captured (Table 2.3-229). Two other feeding categories, omnivore and unknown, had over 1% of the total captures, and were made up exclusively of ants and mites, respectively.

July results showed 3,429 invertebrates in 10 orders captured in sagebrush pitfalls with a combined density of 48.24 individuals/m^2 (Table 2.3-301). Over 77% of the invertebrates captured in pitfalls were in the order Collembola.

The presence of 92.6% of the total captures in the feeding categories saprovore and omnivore reflects the dominance of Collembola and ants in the samples.

In September, total captures dropped to 422 invertebrates in nine orders (Table 2.3-302). Drastic reduction in Collembola captures is the primary reason for the reduction in captures over the previous two sampling periods. Acari and Hymenoptera were the most abundant orders captured, representing a combined total of 76.3% of the total invertebrates taken.

The combined density estimate for all orders used in calculations was 18.58 individuals per m^2.

Orthoptera (primarily crickets-Gryllidae) and Solpugida were numerous at this site relative to other sites. Feeding habit classifications for September pitfall captures in the sagebrush habitat (Table 2.3-233) indicate that the unknown category was the largest; it consisted entirely of mites. Other

categories were composed of members from a variety of orders with the exception of omnivore which contained only ants. The herbivore category contained the largest percentage of total captures at any site in September and contained specimens of Orthoptera, Coleoptera, and Lepidoptera.

Seasonal variation in the sagebrush habitat (Site 4) ground fauna was most apparent in the Collembola, which dropped from 4,856 captures in June to 2,658 in July and one in September (Tables 2.3-300, 2.3-301, and 2.3-302). This change in Collembola numbers is the primary factor influencing reductions in total captures and density estimates over the summer, both of which showed definite declines through September. Acari were captured in large numbers in June as well as during the later two sample periods at this site. There was an increase in total Acari captures each sample period, but the drastic seasonal increases or decreases in Acari numbers demonstrated at other sites did not occur in this upland sagebrush habitat.

The largest total capture of ants also occurred at the sagebrush site with over 850 specimens taken during the sampling season. Ants' avoidance of pitfall traps may be an indicator that even this total is a conservative estimate of the total population within the grid.

Captures of spiders in sagebrush habitat pitfalls remained constant over the summer. The largest total of sunspiders recorded at any site was recorded at this sagebrush site.

Trends in feeding habits over the summer are again closely tied to the trends in captures of Collembola and Acari, the two numerically dominant groups which made up almost exclusively the saprovore and unknown feeding categories, respectively. Consequently, when Collembola captures were high (in June and July), saprovore levels were high, and when Acari populations were high (September), corresponding high percentages of unknowns were recorded. In addition, omnivores made up a substantial portion of the captures of each period, due to the large number of ants taken within the grid.

The sagebrush habitat had by far the most densely populated litter samples in June, ranging from 35.0 to 1,427.4 invertebrates per kilogram of litter for the

five samples taken (Table 2.3-303). This is an average of 519.4 invertebrates per kilogram of litter with a standard error of 260.6 (Table 2.3-235). All five samples were taken under sagebrush. A total of 372 invertebrates were captured, of which 96 individuals were in the family Formicidae, which transported 64 pupae as they migrated through the litter in the Berlese funnel (Table 2.3-236). The presence of pupae is a good indication that the sample was taken over an ant nest, which is probably also true for one other of the five samples in which 74 specimens of the same ant species were taken. Other abundant groups in the samples were Collembola elongate-bodied springtails (Isotomidae) and mites (Acari).

The numerical dominance of ants (Formicidae) at the sagebrush site is the reason why 74% of the invertebrates in litter D-Vac samples from this site were categorized as omnivores (Table 2.3-237). The next largest feeding type (saprovores) was made up primarily of Collembola, the only other order taken in substantial numbers at this site in June.

Fifteen invertebrates were captured in five litter samples in the sagebrush habitat during July (Table 2.3-240). The number of invertebrates per kilogram of litter ranged from 0.0 to 23.1 for an average of 10.9 and a standard error of 4.0 (Table 2.3-304). Four samples were taken from litter near or under sagebrush, while one sample was taken in an open grassy area containing horse feces. This last sample contained no invertebrates resulting in a range of 4.6 to 23.1 invertebrates per kilogram of sagebrush litter. One thrip (Thysanoptera) and four adult winged midges (Diptera: Chironomidae) made up one-third of the invertebrates captured; neither is considered a typical litter-dweller. Six beetles (Coleoptera), consisting of three larvae and three adult darkling beetles (Tenebrionidae), and three mites (Acari) were also taken in litter samples in July. Flower-feeding invertebrates (principally thrips and midges) occurred in July litter samples at the sagebrush site (Table 2.3-241). The most abundant level, unknown, consisted of three mites and three unknown beetle larvae. The last level with more than one individual, saprovore, consisted of the darkling beetles (Tenebrionidae).

September data from the sagebrush habitat show 59 invertebrates captured in five litter samples (Table 2.3-305) giving an average of 90.9 invertebrates per kilogram of litter (Table 2.3-242). All samples were taken near or under sagebrush plants.

Mites (Acari) were the numerically dominant group captured in September litter samples and comprised 46% of the captures. Of the remaining families, only one, Chrysomelidae, contained more than 10 individuals (Table 2.3-244). As a result of the numerical dominance of mites, feeding habits are dominated by unknowns (55.9% of the total captures) (Table 2.3-245). Herbivore, the next most abundant feeding category, was made up primarily of leaf beetles (Chrysomelidae).

Over the sampling season, the average number of invertebrates per kilogram of litter at the sagebrush site dropped from 519.4 in June to 10.9 in July (Table 2.3-238) and rose to 90.9 in September (Table 2.3-242). Total captures ranged from 372 in June to 15 in July (Table 2.3-304) to 59 in September (Table 2.3-305). The seasonal variation in invertebrate numbers at this site is directly attributable to variations in captures of Collembola, Acari, and ants. The dominant group in June samples was ants, with two samples including a nest entrance, resulting in large captures of ants. The fact that placement of the cylinder in sampling happened to fall on a nest entrance in June and not in July and September is the major factor explaining the difference in captures over the season. Acari were present in substantial numbers in June and September but not in July, and Collembola made up more than 13% of the June captures, but were absent in July and September.

The sagebrush site had by far the largest number of darkling beetles captured, with one beetle per 2.43 m^2 of litter surface area. A species of ground beetle larvae (Carabidae) was present in all June and July, indicating the relatively long life cycle of the beetles in general and of a few families (Carabidae, Tenebrionidae) in particular in comparison to other orders.

The most obvious change in feeding habit categories in the sagebrush site litter samples over the season was the reduction in ant (omnivore) captures after June.

July samples were too small to provide reliable estimates of the trophic structure. The large number of mites (Acari) in September samples leads to the numerical dominance of the unknown feeding category.

Herbaceous sweep samples from the sagebrush habitat in June contained 22 invertebrates in 14 species groups (Table 2.3-246). This is the lowest capture total at any site in June, with only one family (Formicidae), having more than three individuals. Seven additional captures were from the order Hymenoptera, all of whichwere parasitic wasps.

Of the total captures, 45% were flower feeders, due primarily to the presence of parasitic wasps in the samples (Table 2.3-247). Omnivores (ants) and herbivores (Hemiptera, Homoptera, and Coleoptera) were also common in samples.

July samples from the sagebrush site contained 133 invertebrates in 35 species groups (Table 2.3-248). Half of the total captures were contributed by the families Cicadellidae and Miridae. Other relatively abundant groups captured were blister beetles (Meloidae), pteromalid wasps (Pteromalidae), ants, and an unknown beetle; all contributed between 5% and 10% of the total captures.

Three of the most abundant groups, Cicadellidae, Miridae, and Meloidae, are herbivores and contributed the bulk of the total captures in that feeding category (Table 2.3-249). The remaining relatively abundant feeding type, predator, was composed of individuals from the orders Araneida, Hymenoptera, and Diptera.

In September, the sagebrush habitat had the lowest total herbaceous sweep captures, with 77 invertebrates in 20 species groups (Table 2.3-250). Thirty of the individuals were in the spider family Salticidae (38% of total capture). Cicadellidae damsel bugs (Nabidae) and parasitic wasps (Hymenoptera) were also common in the samples.

Feeding habit results for the invertebrate captures in herbaceous sweeps from the sagebrush habitat in September show this site to be the only one where a majority of the invertebrates captured were predators (Table 2.3-251). Crab

spiders (Salticidae) made up the bulk of this feeding category, although damsel bugs (Nabridae) and pteromalid wasps (Pteromalidae) were also included. A variety of orders, including Hemiptera, Homoptera, and Coleoptera, contributed to the herbivore level which contained 24.7% of the total captures. Over the summer, total herbaceous sweep captures at the sagebrush site went from the lowest at all sites in June to a peak of 133 in July and 77 in September.

Overall results show relatively low numbers of species groups and total captures in herbaceous sweeps at the sagebrush site in comparison to other sites.

Malaise trap samples taken in the sagebrush habitat during June contained an estimated 4,736 invertebrates (Table 2.3-263). Seventy-nine percent of all captures at this site were contributed by five insect groups. Twenty-four percent of the total captures were midges (Chironomidae), 20% were dark-winged fungus gnats (Sciaridae) and 16% were gall midges (Cecidomyiidae), all in the order Diptera. Of the two remaining abundant groups, a variety of unknown adult moths contributed 14% of the captures and ichneumonid wasps (Ichneumonidae) contained 5%. Feeding habit results for the Malaise trap captures in June at the sagebrush site showed 74% flower feeders (Table 2.3-264).

July Malaise trap capture results from the sagebrush habitat revealed 2,576 invertebrates in 80 species groups (Table 2.3-265). Included in this sample were three groups which contained greater than 8% of the total numbers, Homoptera (24%), adult moths (18%), and Anthomyiidae (9%). Other important families of insects were midges (Chironomidae), gall midges (Cecidomyiidae), chloropid flies (Chloropidae), and ichneumonid wasps (Ichneumonidae), all with over 5% of the total captures. Less than 15% of the total captures were contributed by Hymenoptera; however, nearly one-half of the species groups were from this order, with most of these in the parasitic wasp families.

Flower feeders were the largest feeding category (45.5% of total captures) in July Malaise trap samples (Table 2.3-266). This category was made up primarily of Chironomidae, Chloropidae, adult moths, and Ichneumonidae. Of the invertebrate groups whose feeding habits are unknown, Anthomyiidae, Cecidomyiidae and an

unidentified adult beetle species were the most abundant. The remaining abundant feeding category, herbivore, was made up primarily of Homoptera.

In September, 968 invertebrates in 49 species groups were captured in the sagebrush habitat Malaise trap (Table 2.3-267). Sixty-six percent of the captures were contributed by five groups; Anthomyiidae was the largest group (29% of total captures). Two other dipteran families, Cecidomyiidae and Chloropidae, each contributed 6% of the total captures. The remaining abundant groups (adult moths and Homoptera) contained 13% and 12% of the total captures, respectively.

Over one-third of the species groups were contributed by Hymenoptera, although the abundance of this order was low, contributing less than 15% of the total captures.

The largest percentage of insects in the unknown feeding category (40.5%) was contributed primarily by Anthomyiidae and Cecidomyiidae (Table 2.3-268). Half of the flower feeders (36.8%) were adult moths and Chloropidae. A variety of Diptera and Hymenoptera was also among the flower feeders. The remaining abundant feeding type, herbivore (13.2% of the total captures), was almost exclusively Homoptera.

Over the summer, Malaise trap captures from the sagebrush habitat exhibited a steady decline from 4,736 invertebrates in June to 968 in September.

Of the five trap D-Vac samples taken from sagebrush in June, the average number of invertebrates per cubic meter of sagebrush was 235.8 with a standard error of 46.4 (Table 2.3-306 and 2.3-270). Of the 53 invertebrates in 26 species groups, five families contained 54% of the captures (Table 2.3-271). These consisted of an unknown Hemiptera nymph, delphacid planthoppers (Delphacidae), lady-bird beetles (Coccinellidae), Noctuidae larvae (Lepidoptera), and Tortricoidea larvae.

Of the abudant groups captured in trap D-Vac samples at the sagebrush site in June, all but Coccinellidae were herbivores (Table 2.3-272).

Results of trap D-Vac sampling of sagebrush in July show an average for five samples of 299.0 invertebrates per cubic meter of sagebrush and a standard error of 204.8 (Tables 2.3-307 and 2.3-274).

Twenty-six invertebrates were captured at the sagebrush site during July sampling (Table 2.3-275), with half this number represented by snout beetles (Curculionidae) and leafhoppers (Cicadellidae). Other numerically important groups included thrips (Thysanoptera) and ladybird beetles (Coccinellidae). The 26 invertebrates captured represented 13 species groups, with five of these in the family Cicadellidae.

Twenty of the 26 invertebrates captured were herbivores, making this the dominant feeding category in July with 77% of the total captures (Table 2.3-276). Most of the remaining invertebrates were ladybird beetles (Coccinellidae), which are predators.

In September, estimates of the number of invertebrates per cubic meter of sagebrush in the sagebrush habitat averaged 6,931.7 with a standard error of 4,913.6 (Tables 2.3-308 and 2.3-378).

Fourteen invertebrates were captured in 11 species groups, of which only three families had more than one individual: Cicadellidae (five leafhoppers), Curculionidae (two snout beetles), and Hymenoptera (two unknown wasps) (Table 2.3-279). The majority of the invertebrates captured were herbivores (78.6% of the total captures) including Cicadellidae and Curculionidae (Table 2.3-280).

Density estimates ranged from 235.8 to 6,931.7 invertebrates per cubic meter of sagebrush over the sampling period. Total captures ranged from 41 in June to 14 in September. Of the six families in which five or more individuals were captured in June, only one beetle family (Coccinellidae) was present in both June and July samples. Species groups of Curculionidae, the most abundant family in July samples, were also present in June and September samples, with different groups each period. Herbivores were the dominant feeding category in all sampling periods.

2.3.9.3.5 Mixed Brush Habitat (Site 5) - Pitfall litter D-Vac, trap D-Vac, herbaceous sweep, and Malaise trap samples were taken at the mixed brush site in June, July and September of 1975.

Pitfall results for June at Site 5 reveal a total of 258 captures in 9 invertebrate orders (Table 2.3-309); 80% of these captures were used in density calculations yielding an estimate of 3.99 invertebrates per m^2. Ants were the most abundant invertebrate group captured (30% of total captures).

Four feeding categories were identified in pitfall samples; omnivore (30% of total captures), saprovore (23% of total captures), unknown (22% of total captures), and predator (21% of total captures) (Table 2.3-229).

A total of 705 invertebrates in 11 orders was captured in July pitfall samples at the mixed brush site. Thysanura and Hymenoptera were abundant, accounting for almost 70% of the total captures (Table 2.3-310). Coleoptera total captures were high relative to other sites. Over half of the Coleopterans captured were in the family Tenebrionidae. The numerically dominant order Hymenoptera, consisting entirely of ants, contained 32.6% of the total invertebrates captured. The two remaining abundant orders were Acari and Araneida, with 14.33% and 6.67% of the total captures, respectively.

Two dominant feeding categories for ground-dwelling invertebrates were identified in July; saprovore (40.7% of total captures) and omnivore (32.6% of total captures) (Table 2.3-231). The omnivore category contained ants only; however, the saprovore level included the orders Thysanura, Collembola, Orthoptera, Psocoptera, and Phalangida. Acari made up most of the unknown feeding category.

In September, 225 invertebrates in 10 orders were captured by pitfall in the mixed brush site (Table 2.3-311). Density estimates totalled 5.16 invertebrates per m^2. Acari accounted for 28.89% of the total invertebrates captured.

Acari accounted for the majority of the invertebrates in the unknown category, spiders for most of the predators, and ants for all of the omnivores. Thysanura, Collembola, and Orthoptera comprised the saprovore feeding category (Table 2.3-233).

July pitfall samples from the mixed brush site had the highest total captures but the lowest density estimates. In both June and September samples, density estimates were based on greater than 70% of the total captures, but on only 35% of the July captures. Orders with largest total captures varied each sampling period with ants and Thysanura the most numerous insects taken in pitfalls over the season.

Saprovore, omnivore, predator and unknown feeding categories all contained relatively large percentages of the total captures each sampling period.

Results from litter samples taken in the mixed brush habitat show a range of 26.0 to 263.7 invertebrates per kilogram of litter (Table 2.3-312) with an average for the mixed brush site of 126.9 and a standard error of 45.2 (Table 2.3-255). Sample numbers 76, 155, and 156 were taken under large clumps of serviceberry and snowberry in deeper litter than the other samples and contained 122.8, 263.7, and 186.3 invertebrates per kilogram litter, respectively. The remaining two samples (77 and 80), containing 26.0 and 35.4 invertebrates per kilogram of litter respectively, were taken in more open areas. Ants contributed greater than 30% of the total captures in June. Elongate-bodied springtails contributed 19% of the total captures, unknown beetle larvae 6%, pseudoscorpions 7%, and mites 13% of the total captures (Table 2.3-237). Of these groups, the springtails, beetle larvae and pseudoscorpions were found primarily in the deeper litter under serviceberry and snowberry.

Ants were the most abundant family captured at the mixed brush site, which accounted for the high percentage of omnivores tallied. Other abundant groups and their feeding categories at this site were springtails (Entomobryidae) in the saprovore category and mites (Acari) in the unknown. The predator category consisted of a variety of Coleoptera and Araneida.

A total of 365 invertebrates was captured in July in the mixed brush litter. Numbers of invertebrates per kilogram of litter ranged from 51.4 to 228.4 (Table 2.3-313) for an average of 103.5 and a standard error of 33.4 (Table 2.3-238). Variations in the litter type showed some correlation with the variation in invertebrate numbers. Sample numbers 180 and 181 were taken in deep litter under large serviceberry clumps and contained 228.4 and 118.0 invertebrates

per kilogram of litter, respectively. Sample numbers 178 and 179 were taken in more open areas of serviceberry mixed with snowberry and contained substantially fewer invertebrates (59.2 and 51.4). The last sample (number 182) was from sage litter (Table 2.3-313) and contained 60.6 invertebrates per kilogram liter.

Acari was by far the numerically dominant order, containing 59% of all invertebrates captured (Table 2.3-240). Of the 215 mites sampled, 151 were from the serviceberry litter and 48 from the sage litter. Other abundant groups included elongate-bodied springtails (Entomobryidae), beetle larvae (Coleoptera), ants (Hymenoptera: Formicidae), pseudoscorpions (Chelonethida), and hunting spiders (Gnaphosidae). Springtails were found primarily in the deep serviceberry litter, and the remaining abundant groups were evenly distributed among all samples.

Feeding categories were comprised of 256 unknowns (70.1% of total captures) of which 215 were mites (Acari); the remainder were a combination of unidentified Hemiptera, leafhoppers (Cicadellidae), and unknown beetle larvae (Table 2.3-237). The 49 saprovores (13.4% of total captures) were made up primarily of Collembola, but Psocoptera and Tenebrionidae were also present. The predator level included a variety of taxa with pseudoscorpions (Chelonethida) the most abundant, followed by Araneida, rove beetles (Staphylinidae), stilletto fly larvae (Therevidae), and a centipede (Geophilomorpha).

September litter samples from the mixed brush habitat contained 630 invertebrates in five samples (Table 2.3-314). The number of invertebrates per kilogram of litter ranged from 84.3 to 1,685.3 (Table 2.3-314) for an average of 687.9 and a standard error of 279.5 (Table 2.3-242). Six hundred thirty invertebrates were captured in September litter samples at the mixed brush site. Mites (Acari) accounted for 79% of all captures. Other groups with significantly large captures included elongate-bodied springtails (Entomobryidae), beetle larvae (Coleoptera), pseudoscorpions (Chelonethida), and dictynid spiders (Araneida: Dyctinidae).

Over 83% of the total captures were in the unknown feeding category, most of which were mites. Of the remaining feeding categories, only two, saprovore and

predator, contained more than 5% of the total captures (Table 2.3-245). Fifty-eight of the 60 saprovores were Collembola, and more than two-thirds of the predators were spiders.

Over the sampling season, the average number of invertebrates per kilogram of litter from the mixed brush habitat ranged from 126.9 in June to 103.5 in July to 687.9 in September, giving Site 5 the largest total estimated average number per kilogram litter for the three sampling periods. The average number of invertebrates in the deep serviceberry litter samples went from less than 125 in June to between 118 and 228 in July and between 500 and 1,700 in September. In snowberry-serviceberry litter, which was generally much shallower in depth, averages over the summer varied from nearly 200 in June to less than 60 in July to more than 300 in September. Sagebrush litter showed less variation in invertebrate numbers; averages of 35.4 in June to 84.3 in September were recorded.

Eight species groups of invertebrates were found in both the June and July samples at the mixed brush site. This includes the long-lived pseudoscorpions (Chelonethida), rove beetles (Staphylinidae), and a group of immature beetles (Coleoptera). Four species of ants (Hymenoptera: Formicidae) and one species group of Collembola were also present in both sampling periods. The last group present in both early sampling periods was a species group of fly larvae (Diptera), which are generally short-lived and can be expected to become adults at some time during the summer; this may explain their absence from litter samples in September.

Of the above groups, only pseudoscorpions, Collembola, and immature beetles were also present in September at this site. In addition, one species group of centipede (Geophilomorpha), one ant species, and a ground beetle were collected in June and September indicating they are also present throughout the summer.

Feeding habits of the litter invertebrate fauna at the mixed brush site reflect the relative abundance of mites in the July and September samples with percentage of total captures in the unknown category over 70 in both sampling periods. In June, ants were taken in large numbers compared to other periods and comprise the major portion of the omnivore feeding category.

Herbaceous sweep samples from the mixed brush habitat in June show a total of 50 invertebrate captures in 26 species groups (Table 2.3-246). Plant bugs (Miridae), leaf miner flies (Agromyzidae) and ants (Formicidae) were common in the samples. Only one other family, checkered beetles (Cleridae), contained 10% or more of the total captures. Of the 26 species groups captured, nearly one half (11) were in the order Hymenoptera; five of these were parasitic wasps.

Herbivores comprised 48% of the invertebrates captured at the mixed brush site in June. Half of these were plant bugs (Miridae) and checkered beetles (Cleridae). Flower feeders, the second largest feeding category, contained seven families, the most abundant of which was Agromyzidae. As adults, these flies feed on nectar, but as larvae they are herbaceous leaf miners.

A total of 439 invertebrates in 53 species groups was recorded for herbaceous sweep samples in July (Table 2.3-248). The numerically dominant family was Aphididae, with 142 individuals (32% of the total captured). Miridae, Cicadellidae, Acari, Formicidae, Curculionidae, and Cleridae were also present in the samples.

Most of the 66.1% of the total captures in the herbivore feeding category at this site in September are accounted for by the plant feeding families listed above as abundant. Of these, the majority (Aphididae, Miridae, and Cicadellidae) are plant sap feeders; the remaining families (Curculionidae and Cleridae) are plant tissue feeders.

In September, the total captures from the mixed brush habitat increased to 1,615 individuals per 100 sweeps, contributed by 62 species groups. This is by far the largest total at any site in any sampling period and is comprised primarily of one aphid family (Aphididae) which contributed 80% of the total. Other relatively abundant groups included thrips (Thysanoptera), plant bugs (Miridae) and pteromalid wasps (Ptermalidae). Of the 300 non-aphid invertebrates captured, one-third were parasitic wasps in the order Hymenoptera. Herbivores comprised 88.9% of the total captures; the majority of these were aphids (Table 2.3-251).

Total invertebrate captures peaked in September herbaceous sweep samples from the mixed brush habitat due primarily to the rapid rise in aphid populations. Numbers of species groups also peaked in September. In July and September, aphids were by far the numerically dominant group in captures, although none were encountered in June samples. The mixed brush habitat herbaceous sweep results show herbivores as the numerically dominant invertebrates during all sampling periods. In June this category was composed of a variety of Hemiptera, Homoptera, and Coleoptera, while in July and September the herbivore captures were dominated numerically by aphids.

Malaise trap captures from the mixed brush habitat contained 6,528 invertebrates in June (Table 2.3-263). Sixty-two percent of the total captures were contributed by four families of flies (Diptera), with Chironomidae the most abundant (39% of total captures) followed by lonchaeid flies (Lonchaeidae; 8% of total captures), Cecidomyiidae (8% of total captures), and Sciaridae (7% of total captures).

More than one-half of the flower feeders captured in the mixed brush habitat in June were chironomids, with two additional abundant taxa, Sciaridae and adult moths, also contributing substantial numbers (Table 2.3-264). Sixteen of the 19% unknowns were members of the families Lonchaeidae and Cecidomyiidae. A total of 1,592 invertebrates was captured in the Malaise trap at the mixed brush site in July (Table 2.3-265). Adult moths, Chironomidae, and Anthomyiidae were the most abundant groups recorded. Flower feeders contributed 54.8% of the total captures (Table 2.3-266); two-thirds of these were adult moths, Chironomidae, and Ichneumonidae.

The second most abundant feeding category, unknowns, contained 26.4% of the total captures, with most of these in the dipteran families Anthomyiidae and Lonchaeidae. Two other feeding categories, saprovore and predator, were made up primarily of the families Sepsidae and Ptermalidae, respectively.

In September mixed brush Malaise trap samples, 856 invertebrates in 42 species groups were recorded (Table 2.3-265). The most abundant groups were adult moths, Chironomidae, and Anthomyiidae. Three families contributed greater than

5% of the total captures, including Cecidomyiidae, Chloropidae, and braconid wasps (Braconidae). Flower feeders were the dominant feeding category followed by unknowns (Table 2.3-266).

Over the sampling season, there was a decline in total invertebrate numbers from June to September. Thirteen of the 31 species groups present in June were also present in July, including both species groups of Chironomidae, the lonchaeid fly species, and gall midge (Cecidomyiidae).

Two plant species were sampled by trap D-Vac at the mixed brush site; serviceberry (Amelanchier utahensis) (Site 5A), and mountain snowberry (Symphoricarpos oreophilus) (Site 5B). Five plants of each species were vacuumed. Results of sampling serviceberry gave an average of 733.9 invertebrates per cubic meter with a standard error of 440.0 (Table 2.3-270) in June. Results for the five plants sampled indicate a relatively constant number of invertebrates from each plant, but a variation in the size of the plants (Table 2.3-315). Twenty-four invertebrates in 13 species groups were captured (Table 2.3-271). Two groups, snout beetles (Curculionidae) and catworm larvae (Noctuidae), were the most abundant of the total captures.

Eighty-seven percent of the captures, including both abundant families, were herbivores (Table 2.3-272). Invertebrate density estimates from serviceberry at the mixed brush site in July averaged 133.9 with a standard error of 61.8 (Tables 2.3-316 and 2.3-274). Thirteen invertebrates in 12 species groups were captured from serviceberry in July. Ten of the 13 invertebrates captured were herbivores (Table 2.3-276).

In September, estimates of invertebrate numbers per cubic meter of serviceberry at Site 5A ranged from 351.8 to 8,269.0 (Table 2.3-317), for an average of 2,698.4 and a standard deviation of 1,467.5 (Tables 2.3-278). Plant bugs, scale insects, leafhoppers and aphids were abundant in samples. Thysanoptera and a group of unknown Lepidoptera larvae were also captured (Table 2.3-279). All of the groups considered abundant in the September trap D-Vac samples from serviceberry were herbivores (Table 2.3-280). Over the season, the estimated density of invertebrates per cubic meter of serviceberry went from 733 in June

to 134 in July to 2,698 in September. Herbivores were numerically dominant on serviceberry during all sampling periods.

Snowberry samples yielded an average of 732.3 invertebrates per cubic meter with a standard error of 251.6 in June (Tables 2.3-318 and 2.3-270).

Thirty-seven individuals in 21 species groups were captured in trap D-Vac samples from snowberry at Site 5B in June (Table 2.3-271). Of this total, snout beetles (Curculionidae) were the most abundant group (22% of total captures) followed by Cicadellidae (14% of total captures), stilletto fly larvae (Therevidae) and Thysanoptera (11% of total captures each). Seventy percent of the captures were herbivores, including all of the abundant taxa except Therevidae. Therevidae has predacious larvae, and these made up all of the predator feeding category in the samples (Table 2.3-272).

In samples from snowberry at Site 5B in July, results showed an average of 344.9 invertebrates per cubic meter and a standard error of 205.0 (Tables 2.3-319 and 2.3-274). Herbivores were the most abundant feeding category with Curculionidae and a variety of other species groups making up 69% of the total captures (Table 2.3-276). The only other feeding category with more than one invertebrate was the flower feeder category, with Chironomidae the only family included.

In September, 90 invertebrates were captured in five samples taken from snowberry at Site 5B, yielding a density estimate of 2,118.6 individuals per cubic meter (Tables 2.3-320 and 2.3-278). Of the 90 individuals taken, 47% were in two groups: globular springtails (Smithuridae), and thrips (Thysanoptera) (Table 2.3-279). The rest were distributed among 30 other species groups in 17 families. In both abundant families, individuals were taken in all samples.

Over the sampling season, density estimates and actual captures of invertebrates on snowberry closely paralleled the results of samples from serviceberry, being low in July and very high in September.

2.3.9.3.6 Summary of Quarterly Data (September through November, 1975) - September results for the five habitat types sampled showed lower total captures in all of the strata sampled relative to June and July. Ground-dwelling fauna were most abundant in litter in September but were very scarce on the surface. A variety of samples from vegetation indicated that herbaceous vegetation supported the largest invertebrate fauna of all September vegetation samples at all but the two sagebrush habitats. In addition, invertebrate captures from shrubs were numerically smaller in September than in June or July on all but the two species sampled in mixed brush. Captures of active flying species at all sites were down substantially in September from those recorded in July.

The unknown feeding category contained the majority of the captures of ground-dwelling invertebrates at nearly all sites in September. This was due to the relative abundance of mites in most cases. In samples taken from all types of vegetation, however, herbivores were consistantly the numerically dominant group. The predominance of the unknown feeding type among invertebrates captured from Malaise traps in September reflected the numerical dominance of Anthomyiidae in most of these samples.

2.3.9.4 Summary and Conclusions - Several different methods were used to sample invertebrates at five vegetation types in June, July, and September of 1975. In each of the vegetation types (greasewood-sagebrush, south slope pinyon-juniper, north slope pinyon-juniper, sagebrush, and mixed brush) samples were taken by pitfall, litter D-Vac, herbaceous sweep, and Malaise trap methods. Trap D-Vac samples were also taken from one or more of the dominant shrub species at each site. In greasewood-sagebrush and pinyon-juniper on north and south slopes, aerial sweeps and beating samples were also taken.

The following discussion will establish which invertebrate groups are numerically important within each vegetation type. Importance is based on a group's potential for influencing the health of biomass production of the dominant vegetation species. Groups peculiar to a specific habitat type and groups which are important in controlling invertebrate population fluctuations within each of the vegetation types will also be discussed.

Seasonal population trends of the important invertebrate groups and the possible effects of abiotic factors on these trends shall be presented when recognized. Comparisons of invertebrate groups within vegetatively similar sites and of the important aspects of invertebrate ecology over all sites will be emphasized.

The ground dwelling fauna in greasewood-sagebrush contained one order, Phalangida, which was captured in abundance at this site only. All of the captures were in pitfalls, indicating that the species of this order are probably not true litter dwellers, but were captured on the ground while searching for food or water. In order for this group to be active, there must be a continual source of free water for drinking (Savory, 1962). This water source was probably available at the greasewood-sagebrush site in June as a large number of Phalangida were captured at that time. In later sampling periods they were not captured frequently, leading to the assumption that their activity was limited by the lack of available free water. The assumption that free water was less frequent in July and September was substantiated by daily visual observations of the amount of moisture in the pitfall cups. In June the presence of moisture in the cups was apparent nearly every day while in July it occurred only twice in the 10-day period. In September, brief showers occurred frequently; however, the cool night temperatures probably precluded most nocturnal activity by Phalangida, and by early morning the vegetation and pitfall cups were already dry.

Mites (Acari) were also abundant in samples from greasewood sagebrush, with large increases in captures as the season progressed. Most of the mite captures were hard-bodied Orbatid mites whose tolerance of extreme heat and dessication varies with the species (Butcher, Snider and Snider, 1971). It appears that the species found in this habitat are relatively tolerant to heat and dessication and can survive and reproduce under conditions of decreasing soil moisture. If in fact soil moisture was reduced over the season, then competition for food within the litter layer may also have decreased over the season as a result of reductions in numbers of other litter inhabiting groups, such as Collembola, which require moisture for feeding (Ford, 1937). This may be one of the factors contributing to the substantial increase in Acari captures over the sampling season. One other order, Psocoptera, was the only other order of ground dwellers which was abundant only in the greasewood-sagebrush habitat. Psocoptera probably avoided the presumed dry conditions by limiting their activities to the litter where they were captured in abundance in September. During July sampling, however, they were captured in large numbers in pitfalls.

The invertebrate fauna which inhabited the vegetation in greasewood-sagebrush can be divided into two groups based on whether they were found on the dominant shrub species or on the herbaceous vegetation.

Two families captured from the herbaceous vegetation appeared to be of importance due to their high total captures. In July, Chloropidae made up the bulk of the sweep sample. It is possible that this family, which was abundant at the greasewood-sagebrush site only, was the major herbivore group feeding on rye grass. The larvae of this family feed in the culms of grasses, and can reduce the production of grass species and the formation of flowering heads, thereby reducing seed production (Sabrosky, 1936; Blocker, 1969).

September sweep samples were dominated by a species of seed bug (Lygaeidae). It is suspected that the abundance of this group was also related to the large amounts of rye grass found in the understory of the greasewood-sagebrush site. Prior to the September sampling period, the nymphs of this family were probably feeding on the seeds of rye grass. The appearance of the adult stage coincides with drying up of the seeds when the grains no longer provide a succulent source of food. It appears that the sample was taken as the adults prepared to migrate to other sources of food, or find suitable places for overwintering.

Sampling of the two dominant shrub species in the greasewood-sagebrush habitat, sagebrush and rabbitbrush, revealed that total invertebrate captures were more abundant from these plant species than from shrub species sampled in other vegetation types. In samples from rabbitbrush, three herbivore taxa were common during different sampling periods. Thysanoptera, Anthicidae, and Cleridae were all found on the flowering heads of the plants sampled. Thysanoptera and Anthicidae are feeders on flower parts, and their abundance could have an effect on seed production. Both are known pests of range plants in grassland areas (Blocker, 1969; Brues, 1946). Cleridae was also considered a herbivore, although most members of the family are predators. The family is not known as a pest, although visual observations indicated that they were present in large numbers in the flowering heads of rabbitbrush in July. If they were feeding on flower parts, they could have a substantial effect on seed production.

Samples from sagebrush revealed a number of herbivorous families which were abundant throughout the season. Aphididae was probably the most important of these families in terms of the effects of their feeding on sagebrush. This family had large total captures in July and September, with the same species group abundant in each period. Their relative abundance later in the season is characteristic of aphid populations which reproduce in large numbers with several to many generations per season (Borror and DeLong, 1971). The presence and abundance of aphids may be the reason for relatively large numbers of lady-bird beetles (Coccinellidae) in the captures. This group is well known as predators of aphids although members of the family feed on many other insects as well (Borror and DeLong, 1971). Cocinellidae was only part of an abundant predator fauna captured at this site.

Of the fauna captured in Malaise traps in greasewood-sagebrush, two families, Cecidomyiidae (gall midges) and Anthomyiidae, were very abundant and were probably the most significant insect groups in terms of their effect on the vegetation in the greasewood-sagebrush habitat. Many of the gall midges are considered pests because of their means of reproduction, which involves ovi-position into the tissue of the plant hose species and results in gall formation. Formation of these galls can cause disruption of normal plant growth and, in some cases, death of the plant tissue past the point of gall

formation. Many plant species, including sagebrush, are hosts for a variety of gall makers, and in some instances this has led to weakening or death of the plants involved (Felt, 1965).

Several species groups of Anthomyiidae were abundant in July and September at all sites. Although little is known of their life histories, they must be considered important because of their large numbers. Anthomyiidae larvae have a variety of feeding habits including herbivore and dung feeding. Based on morphological characteristics, the groups sampled were not herbivores as larvae, but dung feeders. If this is the case, then this group probably plays an important role in nutrient recycling in the study area by breaking down detritus.

A group of wasp families with parasitoid larvae was captured in all strata at the greasewood-sagebrush site. There was a variety of species groups present in all samples throughout the season, with relatively large total numbers in most cases. The value of this group is well known in agriculture because of attempts to use certain species as a form of biological control of economic pest insects (Borror and DeLong, 1971). In a natural habitat these groups are beneficial in providing a source of control for rapid increases in populations of many groups of herbivorous insects. The host specificity of these parasitic wasp larvae (Borror and DeLong, 1971) combined with the fact that a wide diversity of parasitic wasp families and species groups exists in the study area indicates that this group may exert a considerable influence on the populations of a wide variety of herbivorous insects.

Dominant orders in the ground-dwelling fauna of the south slope/pinyon-juniper habitat were Collembola and Acari. In June, Collembola were captured in large numbers in pitfalls, but were absent from litter samples. Collembola require a moist environment to escape dessication and,more importantly, for feeding (Ford, 1937), indicating that moisture levels on the ground surface were probably high in June at some point during the day. Pitfall captures of Collembola probably occurred at night when cool temperatures and higher humidities existed. During the day, Collembola must retreat to protected microhabitats where humidities remain high, and it would seem that these conditions would exist in the thick litter layers under pinyon and juniper trees.

In July, Collembola were not collected in pitfalls but were abundant in litter. During this period moisture was probably not sufficient on the ground surface for Collembola to feed, and as a result they were found only in the litter. In contrast, Acari were not captured in large numbers until July and August, when they were the most abundant invertebrates. This increase in mites over the season was characteristic of all sites and was interpreted in discussions of trends in Acari captures for the greasewood-sagebrush site. It appears that the same reasoning for the existance of these trends applies to the Acari populations at this south slope pinyon-juniper site. The relatively low numbers of mites in June might be a result of the fact that most mite species have a relatively narrow range of temperatures in which they are active (Butcher, et al., 1971). During June soil temperatures were quite low for most of the day, reaching 15^{o}C only for short periods. In July, soil temperatures usually reached 15^{o}C by the time the first readings were taken in the morning. It is suspected that with the increase in length of time in which higher soil temperatures occur during the day, Acari populations were more active and increases in the population occurred.

The type of litter sampled also had a bearing on the numbers of invertebrates captured in all sample periods. Samples from litter under pinyon pine contained the majority of the captures in July, while juniper litter samples for the same sample period contained few invertebrates, none of which were Collembola. As the litter layer under both tree species was thick and somewhat moist, it is possible that the juniper litter itself inhibited insect colonization to some degree. The presence of phenols in the tissue of juniper trees is known to prevent many herbaceous insects from attacking the foliage of juniper (Personal communication, T.O. Thatcher, 1975, Utah State University), and this may also be the reason that the juniper litter was relatively free of insects.

Scorpions (Scorpionida) were found exclusively in the ground-dwelling fauna of south slope/pinyon-juniper habitat. Three individuals were captured over the summer within the pitfall grid boundaries, resulting in a density of 0.03 scorpions per m^2, a relatively high density for this large, mobile predator group. Air and soil temperatures were highest at this site relative to other

sites throughout the sampling season, and this may be the reason for their presence at this site, where the most xeric conditions existed.

Ants were captured in relatively large numbers at this site in July and September pitfall samples. They were observed actively moving about in the grid in the early morning but had disappeared by mid-day. This demonstrates a behavioral adaptation which is widespread in this family. The ants react to high temperatures by foraging earlier or later in the day when it is cooler.

Low herbaceous sweep sample totals reflect the sparse ground layer vegetation in the south slope/pinyon-juniper habitat. The dominant group as the season progressed was Aphididae, which had relatively large total captures in September. Ants were also common in all periods and in September were observed tending aphids on nearly every Leptodactylon sp. plant inspected in the vicinity of the grid.

Results of sampling shadscale revealed this plant species had the least number of associated herbivorous insects throughout the season. The relative thickness and hardness of the leaves as well as high salt concentration in the plant tissue may be a factor in the reduced numbers and variety of herbivorous insects on shadscale relative to other plant species sampled. In June, a group of lepidoptera larvae in the superfamily Tortricoidea were abundant, presumably feeding on the foliage. By July they were no longer present, and it is suspected that they had moved to the litter for pupation and later emerged as adults. This may in part explain the large number of adult moths present in July Malaise trap samples.

Scale insects were also abundant in June and September, but absent in July. The immature life-stage in which this group was captured was readily removed from the plants by vacuuming. The adult females, however, are stationary and fixed to the plant branches, and cannot be readily removed, which may explain why no scale insects were captured in July.

Chironomidae was the most abundant group collected in samples from shadscale in July. It appeared as though adult chironomidae were attracted to shadscale by a concentrated plant sap produced by the plant in response to moisture stress.

It is possible that this substance may have been of some nutritional value to the adult Chironomidae. Other shrub species sampled in the same vicinity as the shadscale did not harbor chironomidae in large numbers.

Samples from pinyon pine contained few invertebrates in June, but in July and September a large number of Miridae was collected. This family feeds primarily on plant sap and is not always host plant species-specific (Borror and DeLong, 1971); however, their abundance in pinyon pine indicated that they may have been feeding on the foliage. Keen (1952) lists no Miridae species as economically important pests of pinyon pine.

Samples from juniper were dominated numerically by what appeared to be the same species group of Miridae captured on pinyon pine. This group was present throughout the sampling season.

Active flying groups captured in the south slope/pinyon-juniper habitat were dominated numerically by adult moths, Cecidomyiidae, and Anthomyiidae. All are herbivores or saprovores, either as larvae or adults, and where their numbers are large they can have serious effects on the vegetation upon which they feed.

The remaining group taken in abundance at the south slope/pinyon-juniper site was a species group of Scarabaeidae. Larvae of this family have a variety of feeding habits including herbivore and dung feeding.

Ground-dwelling invertebrates in the north slope/pinyon-juniper habitat exhibited many of the same characteristics as those captured in the south slope/pinyon-juniper habitat. In June, Collembola were abundant in pitfalls and absent in litter samples. Possible explainations were presented in the preceding discussion of the ground-dwelling fauna at the south slope/pinyon-juniper habitat. In July, however,results for the two pinyon-juniper sites differed in that Collembola were present in both pitfall and litter samples at the north slope/pinyon-juniper site. Collembola presence in pitfalls may be an indication that some moisture was available on the surface to prevent dessication and facilitate feeding.

Increased tree cover and less direct sunlight at the north slope/pinyon-juniper site relative to the south slope site may have been partially responsible for this condition. In September, Collembola were present only in the litter samples and had substantially decreased in numbers.

It appears, then, that Collembola populations were actively feeding and reproducing for longer periods of time during the summer in the north slope/pinyon-juniper habitat than in the south slope habitat, therefore increasing consumption of dead plant material in the former habitat due to the longer time period of active feeding. Less obvious is the possibility that Collembola feeding on fungal hyphae could keep the fungi at maximum production, thereby indirectly increasing the amount of dead plant matter broken down (Christiansen, 1964).

Acari captures in the north slope/pinyon-juniper habitat exhibited the same trends in total numbers (for pitfall and litter D-Vac samples) as Acari populations at the south slope/pinyon-juniper site. Suggested explanations already presented in the discussion of trends in Acari populations in the greasewood-sagebrush habitat are applicable to the Acari fauna at this site.

Low capture totals in sweep samples from the ground layer vegetation at the north slope/pinyon-juniper site were indicative of the small amount of vegetation in the understory. Only one group of herbivores, Psyllidae, was abundant in any of the sampling periods.

Visual observations of pinyon pine in the north slope/pinyon-juniper habitat indicated that ants were actively foraging in the foliage of most trees surveyed in June. Sweep and beating sample results supported this observation in that ants were the abundant group captured in June samples. No likely prey species or aphid populations were present in the samples at that time, however, indicating that the ants were probably feeding on vegetation rather than aphid waste products at that time. Ants observed in columns moving down the trees were not carrying visible food particles, leading to the conclusion that they were probably feeding on plant sap. In July, the Miridae found in pinyon pine

in the south slope/pinyon-juniper habitat were also abundant in pinyon pine at the north slope/pinyon-juniper site. In addition, a few aphididae were captured which indicated the beginning of a buildup in population of this group, which peaked in abundance in September. As stated in the discussion of Aphididae captured from shrub species at the greasewood sagebrush habitat, members of this family are well known as economic pests on a variety of agricultural and rangeland plants. Aphids can also be economic pests of most tree species including the pines (Keen, 1952), although evidence of tree death due to Aphididae attack is an uncommon occurrance.

Samples from juniper foliage contained only one abundant herbivore group, the Miridae, which was also taken in large numbers from juniper in the south slope/ pinyon-juniper habitat.

A comparison of results for pinyon and juniper at both of the sites where the two species of trees are dominant indicated that overall there were more species groups of herbivores captured from foliage of pinyon than from juniper. It is possible that this was a result of the phenols present in juniper as discussed previously for litter samples at the north slope/pinyon-juniper habitat.

June Malaise trap results for the north slope pinyon-juniper habitat revealed relatively large numbers of dipterans, including members of the family Cecidomyiidae. The effect of this family on vegetation was discussed previously.

Two other families which contained relatively large total captures in June were Sciaridae and Mycetophilidae, families whose larvae are fungus feeders. The thick litter layer under pinyon pine contained large amounts of fungae hyphae, and it is possible that these families developed and emerged from this microhabitat. The remaining abundant group included two families of bees, Aphidae and Andrenidae. These two families are members of the superfamily of bees which are important as pollinators in nearly any vegetation type. Their presence in this north slope/pinyon-juniper vegetation type, where the understory contained few insect-pollinated plant species, was unusual in view of the fact that they collect nectar and pollen. It is possible that the abundance of dead

trees in this habitat offered the best choice of nest locations where a colony of bees could establish itself and still be within flying distance of areas such as sagebrush and rabbitbrush which provide a greater diversity of food plants. Reaching areas where food sources were more abundant would not be difficult for members of these families,which are known to range up to three miles in normal daily foraging activity (Dadant et al., 1975).

Most of the abundant groups found on sagebrush at the greasewood-sagebrush site were not present in trap D-Vac samples from sagebrush in the pinyon-juniper habitat. The plants sampled were in most cases relatively free of attack by herbivorous insects. One exception was a species group of Curculionidae which was found in relatively large numbers during all sampling periods. Most of the species in this family are monophagous or limited to a few plant hosts (Arnett, 1973), and in many cases larval development occurs within the stems of the plant. However, the larvae and adults do not always feed on the same plant species. The relatively low numbers of captures per plant may indicate that the damage to sagebrush is not substantial, although if the larvae were feeding within the stems, cumulative damage over several seasons could result.

The last group which showed potential for herbivorous damage of sage at this site was a species of immature scale (superfamily Coccoidea). On one plant sampled in September, over 140 individuals -- a relative large number for a single plant -- were captured. The damage potential for this group is well documented for many herbaceous plant species (Borror and DeLong, 1971).

Death of plants caused by scale insect attack is not common. Most damage is usually caused by a general weakening of the plant over a number of seasons.

When all sampling types used at the north slope/pinyon-juniper habitat over the season are considered, two groups appear to be the most important in terms of numerical abundance, diversity and distribution in the various strata. Ants are found in all types of samples and were considered the single most dominant of all families identified. Parasitic wasps were the other dominant group. This group is probably important in controlling the populations of many types of herbivorous insects as previously discussed.

The sagebrush habitat contained the largest captures of ground-dwelling fauna in June of any habitat type sampled. The majority of the specimens taken were in one species group of Collembola, which was captured in both pitfall and litter samples. Litter layers at this site were probably the least conducive to large population buildups of Collembola than at any of the other sites because the litter layer was generally shallow and found only at the bases of sagebrush plants. Physical factors which are conducive to surface activity of Collembola were previously discussed.

In July, Collembola were again numerous in pitfall samples but almost absent from litter samples. A favorable moisture supply again probably allowed for surface activity of this group; however, they probably retreated into the soil during harsher daytime periods of low humidity and high temperatures. It is possible that because of shallow litter layer, little shelter and humidity was afforded this group. Therefore, they may have been forced to seek shelter in more favorable microhabitats such as under rocks, and at the bases of relatively large shrubs and grass clumps.

Pitfall traps captured large numbers of ants in nearly all sampling periods. In June alone, over 500 ants were captured in the grid, which was a relatively large number foraging in an area of 100 m^2. This family can have a substantial effect on the vegetation of an area, particularly if they are existing as herbivores. In this role, which is common in many species during the spring, they gather seeds and crop young plants for food. Although western harvester ants were not included in the captures, their ability as seed gatherers and plant harvesters as reported in the literature is worth mentioning to give some idea of efficiency of members of this family in depleting the vegetation to obtain food. Rogers (1972) found that three medium-sized colonies could remove nearly 20 pounds of seeds per acre over a period of a year. In another study, Clark and Comanor (1975) determined that plant removal from around mounds in Nevada amounted to cutting of over 150 million plants per hectare per year.

Capture totals of invertebrates taken in herbaceous sweep samples were very low in all periods in view of the apparent abundance of grasses and forbs observed in the sagebrush habitat. No groups were numerically abundant in any period, and capture totals were relatively low compared to other sites in two of the three periods.

Samples from sagebrush in the sagebrush habitat contained relatively few herbivores or captures of any kind in nearly all sample periods. The numerically dominant group was the same species group of Curculionidae found on sagebrush at the north slope/pinyon-juniper site. The potential effects of this group on sagebrush plants was discussed previously.

Malaise trap results were nearly identical to those of other habitats in terms of abundant groups, total numbers and seasonal trends of the fauna. Abundant groups during one or more sampling periods included Cecidomyiidae, adult moths, and Anthomyiidae. Chironomidae were abundant in June, although there is no permanent water source in the immediate vicinity of this site. Members of the family are weak flyers and depend on wind for dispersal, which probably is the means by which they arrived at the sagebrush habitat.

Parasitic wasps were the most diverse group of insects captured by all sampling techniques other than those designed for ground-dwelling invertebrates. They are important in that they control the populations of many insect groups, particularly herbivores as previously discussed.

Ground-dwelling invertebrate captures in the mixed brush habitat were relatively low in June compared to other habitats, probably because Collembola were not as numerous here as they were in most of the other habitats. This is puzzling in view of the deep litter available at this site which appeared to be ideal habitat for Collembola populations. The relatively low numbers of Collembola appearing in litter samples were approximately equal in numbers for all sampling periods, an indication that moisture conditions were adequate for Collembola populations to exist throughout the season.

Ants were the numerically dominant group in pitfall samples in all sampling periods, and were relatively abundant in June and July litter samples at the mixed brush site.

The ground-dwelling fauna was diverse at the mixed brush site, with a variety of groups captured in all periods in both litter and pitfall samples.

Sweeps from vegetation other than the dominant shrub species contain the largest number of invertebrates in July and September of any habitat sampled. In both sampling periods, Aphididae was by far the most numerous family captured, totaling over 140 individuals in July and 1,300 in September. Visual observation of the vegetation in September revealed that the few rabbitbrush plants in the habitat were covered with Aphididae. The Aphididae appeared to be of the same species group, therefore it is possible that all came from the rabbitbrush plants sampled in the herbaceous sweep samples. If this is the case, such a large number of Aphididae on so few rabbitbrush plants could have an adverse effect on the rabbitbrush by removal of plant sap.

Samples from serviceberry in June and July did not contain insects in sufficient numbers to indicate possible plant damage by herbivorous insects. In September, total captures increased substantially with most of these being herbivores in the orders Hemiptera and Homoptera. Visual observation of the plants in September indicated that most of the foliage had dried up, and as a result it was difficult to explain the increases in the fauna from the earlier sampling periods.

Samples taken from snowberry were similar in composition to those taken from serviceberry. None of the herbivore groups present were abundant enough to cause widespread plant damage. The September snowberry fauna consisted primarily of Sminthuridae and Thysanoptera. In view of the observation that foliage of snowberry was nearly dry, it is possible that the fauna was actually present in litter under the plants preparing for the change in seasons, since both groups over-winter in the litter in the adult stage.

In Malaise trap samples, two groups, Chironomidae and adult moths, were abundant in all sampling periods. Chironomidae were very abundant in June, which appeared to be the result of large emergences from the nearby creek. This was consistant with Malaise results from other sites where Chironomidae were also the most abundant group captured in June. This family also had large total captures in July and September. This is consistant with the literature which shows that many species of Chironomidae have large peaks early in the season with continued smaller peaks throughout the warm months (Judd, 1962).

Adult moths were most abundant in July and also very common in June and September. As stated in the discussion of results for the south slope/pinyon-juniper habitat, the large number of adult moths in July was probably the result of pupation of larvae present in the early sampling period and subsequent emergence of adults. The presence of relatively large numbers in June indicated that groups captured probably over-wintered as larvae and began the transformation to the adult stage in June after temperatures increased to the point where overall insect activity began.

Lonchaeidae was one of the families found exclusively in the mixed brush habitat. Most of the species in this family occur chiefly in moist or shady places,and the larvae are secondary invaders of diseased or injured plant tissue (Borror and DeLong, 1971). Their abundance in June and July samples was indicative that some portion of the vegetation had been damaged in some manner. Vegetation sampling results from mixed brush stands did not indicate any apparent widespread damage to a particular plant species nor any widespread damage to all of the plants within a mixed brush stand. Possible sources of damage which could have provided the source of larval food may have been browsing by horses in the winter or crushing of the foliage by cattle which are abundant in the area during the summer.

The presence of numerous cattle at the site may also have been the reason for the relative abundance of Sepsidae in the Malaise trap samples. The larvae live in excrement and the adults are often numerous near the excrement (Borror and DeLong, 1971).

Anthomyiidae was the most abundant family in July and September samples as at other sites. Their feeding habits were unknown, but their abundance makes them an important group in some aspect of the food web at this site as well as at all other sites.

Total captures of invertebrates over the summer were greatest in the greasewood-sagebrush and sagebrush habitats. Major contributions to these totals came from Malaise trap samples in the greasewood-sagebursh habitat due primarily to large captures of Chironomidae and Anthomyiidae.

The ground-dwelling fauna captured in pitfalls was the most significant factor contributing to the overall invertebrate abundance in the sagebrush habitat. Large numbers of Collembola and Formicidae were responsible for most of this total. The mixed brush site also contained relatively large numbers of invertebrates, primarily due to high capture totals for herbaceous sweep samples. In both of the pinyon-juniper habitats, captures of ground-dwelling invertebrates and active flying insects were relatively high; however, samples from dominant shrubs and trees and herbaceous sweep samples were low in total captures. Low total captures in herbaceous sweep samples from the understory vegetation reflect the small amount of vegetation present.

Of the shrub species sampled, shadscale from the south slope/pinyon-juniper site had the least number and variety of associated herbivorous insects. Rabbitbrush and sagebrush from the greasewood-sagebrush site supported the largest number of invertebrates. By contrast, sagebrush samples from north slope/pinyon-juniper and sagebrush habitats did not support the variety of invertebrates found on sagebrush in the greasewood-sagebrush habitat.

Seasonal trends in captures of the fauna in the various strata of each habitat indicate that peak populations occurred in July at all sites. Numbers of invertebrates in Malaise trap samples did not peak in July, however, but demonstrated the highest total captures in June and the lowest in September. Much of the reduction in captures from June to July at each site was due to the reduction in the number of Chironomidae which emerged in large numbers from nearby water sources in June.

The major orders of ground-dwelling invertebrates collected over all sample sites and all sample periods were Collembola and Acari. Collembola were very abundant at three sites, north and south slope/pinyon-juniper and the sagebrush habitat. Capture trends for the orders had a large peak in either June or July with substantial reductions or complete absence in September. Capture totals were related to the presence of adequate moisture needed to prevent dessication and facilitate feeding.

Acari were abundant at all sites, with large increases in captures as the season progressed. Moisture and heat effects which caused reductions in Collembola populations did not affect the most numerous group of mites, the hard-bodied Orbatids, because of their relative resistance to heat and moisture stress.

Most of the active flying insects were contributed by a variety of dipteran and hymenopteran families. A number of families were collected in large numbers at all sites including the two families which had the largest total captures, Anthomyiidae and Chironomidae. Anthomyiidae increased from relatively few captures at most sites in June to by far the largest total captures in July and September. Greasewood-sagebrush, sagebrush, and mixed brush habitats contributed most of the total Anthomyiidae captures. Cecidomyiidae were abundant in June at all sites, but varied in relative abundance by site in July and September.

Adult moths were abundant at all sites in July, and nearly all sites in September sampling periods. The major increase in total captures from June to July was the result of pupation of Lepidoptera larvae found most frequently in the June samples.

Phalangida and Psocoptera were abundant only at the greasewood-sagebrush site. The presence of large numbers of Phalangida in June only is related to the frequency of available free water. Two families were abundant only in samples from the greasewood-sagebrush habitat. Both are probably associated with rye grass, the dominant herbaceous species in the greasewood-sagebrush habitat. Chloropidae larvae are plant tissue feeders which inhabit the stems of the grasses and can cause reductions in seed production. The adults were abundant

in July samples only. September samples contained large numbers of a seed bug (Lygaeidae) which was abundant only in this period after rye grass seed formation was completed. This family is also known as a plant pest in certain situations.

South slope/pinyon-juniper was the only habitat which contained scorpions (Scorpionida) in the ground-dwelling fauna. Their presence at only this site is related to the overall higher ground temperatures that occur on this south-facing slope. Shadscale from the south slope/pinyon-juniper habitat was the only shrub species sampled upon which Chironomidae were suspected to be feeding, although this group was present and abundant at all sites. The Chironomidae were suspected to be feeding on liquids secreted by the plants. The south slope/pinyon-juniper habitat was also the only site in which ants were observed tending aphids.

At the north slope/pinyon-juniper site, no families of insects were captured that were not found at other sites; however, Apidae and Andrenidae were abundant at this site and not at the other sites. These two groups are important as pollinators, and it is suspected that their abundance in the north slope/pinyon-juniper habitat probably is related to the availability of nesting sites in dead trees.

No abundant families were found exclusively in the sagebrush habitat. The most significant aspect of samples taken at this site was the presence of unusually large numbers of Collembola in June and July, although the litter present did not seem to be sufficient in terms of depth or abundance relative to the other four sites.

The mixed brush habitat produced two families of flies which were only abundant in this vegetation type. Lonchaeidae larvae feed on damaged plant material, and abundance of the adult stage may indicate that damage had occurred to some portion of the vegetation. Despite this apparent cause-effect relationship, no readily visible damage was observed in the vegetation. Probable causes of vegetation damage may have been browsing by horses or physical damage by cattle continuously moving back and forth through the site. The remaining

abundant fly family, Sepsidae, was associated with large amounts of cattle dung at the site which probably provided the food source and substrate for larval development.

At all sites, the dominant shrub and tree species sampled had an associated complement of herbivorous insects which were contributed primarily by the orders Hemiptera and Homoptera. In most cases these species groups were different for each plant species because of the host species specificity of the families involved.

When all sites and strata within each site are considered, the dominant family overall was Formicidae. They were present and abundant in every type of sample. In most samples of ground dwelling invertebrates, Formicidae were either the most abundant group, or second in abundance to Collembola. They were found foraging on all of the shrub and tree species sampled and also were observed tending aphids on one species of herbaceous plant. Finally, Malaise trap results give an additional indication of their importance in that almost five hundred reproductives were captured over the summer.

TABLES FOR
INVERTEBRATES

Table 2.3-226 Site descriptions for invertebrate sampling locations for RBOSP.

LOCATION DESIGNATION Invertebrate Sample Sites	Vegetation Type	Aspect/Elevation
1 (A)	Greasewood/sagebrush	Flat/6400'
2 (B)	Pinyon-juniper	South/7000'
3 (C)	Pinyon-juniper	North/6900'
4 (D)	Sagebrush	North/7100'
5 (5)	Mixed brush	North/7200'

Table 2.3-227 Invertebrate groups identified to date for RBOSP

ORDER Family	Common Name
THYSANURA	
Machilidae	Jumping bristletails
DIPLURA	
COLLEMBOLA	
Isotomidae	Elongate-bodied springtails
Entomobryidae	Elongate-bodied springtails
Sminthuridae	Globular springtails
ORTHOPTERA	
Acrididae	Short-horned grasshoppers
Gryllacrididae	Long-horned grasshoppers
Mantidae	Mantids
PSOCOPTERA	
Trogiidae	Psocids
Psocidae	Psocids
THYSANOPTERA	
Phlaeothripidae	Thrips
HEMIPTERA	
Anthocoridae	Minute pirate bugs
Miridae	Plant bugs
Nabidae	Damsel bugs
Reduviidae	Assassin bugs
Tingidae	Lace bugs
Aradidae	Flat bugs
Lygaeidae	Seed bugs
Piesmatidae	Ash-grey leafbugs
Coreidae	Leaf-foot bugs
Pentatomidae	Sting bugs
Cydnidae	Burrower bugs
HOMOPTERA	
Membracidae	Treehoppers
Cicadellidae	Leafhoppers
Cercopidae	Froghoppers
Delphacidae	Delphacid planthoppers
Issidae	Issid planthoppers
Psyllidae	Psyllids
Aphididae	Aphids
COLEOPTERA	
Carabidae	Ground beetles
Histeridae	Hister beetles

Table 2.3-227 (Continued)

ORDER Family	Common Name
COLEOPTERA (Continued)	
Staphylinidae	Rove beetles
Scydmaenidae	Antlike stone beetles
Cantharidae	Soldier beetles
Lampyridae	Lightening bugs
Dermestidae	Dermestid beetles
Ostomidae	Bark-gnawing beetles
Cleridae	Checkered beetles
Elateridae	Click beetles
Buprestidae	Metallic wood-boring beetles
Byrrhidae	Pill beetles
Erotylidae	Pleasing fungus beetles
Lathridiidae	Minute brown scavenger beetles
Coccinellidae	Ladybird beetles
Anthicidae	Antlike flower beetles
Meloidae	Blister beetles
Alleculidae	Comb-clawed beetles
Tenebrionidae	Darkling beetles
Melandryidae	False darkling beetles
Ptinidae	Spider beetles
Anobiidae	Death-watch beetles
Scarabaeidae	Scarab beetles
Chrysomelidae	Leaf beetles
Curculionidae	Snout beetles
Scolytidae	Bark beetles
NEUROPTERA	
Hemerobiidae	Brown lacewings
Chrisopidae	Green lacewings
Myrmeleontidae	Antlions
Raphidiidae	Raphidiid snakeflies
LEPIDOPTERA	
Pieridae	Sulphurs, whites, and orange tips
Satyridae	Satyrs and wood nymphs
Nymphalidae	Brush-footed butterflies
Lycaenidae	Gossamer-winged butterflies
Hesperidae	Skippers
Arctiidae	Tiger moths
Noctuidae	Armyworm and cutworm moths
Geometridae	Geometer moths
Pyralidae	Pyralid moths
Sphingidae	Sphinx mothes
Lasiocampidae	Tent caterpillars
Coleophoridae	Casebearers and lappet moths
Gracilariidae	Leaf blotch miners

Table 2.3-227 (Continued)

ORDER Family	Common Name
DIPTERA	
Tipulidae	Crane flies
Psychodidae	Moth flies--sand flies
Culicidae	Mosquitos
Chironomidae	Midges
Simuliidae	Black flies
Bibionidae	March flies
Mycetophilidae	Fungus gnats
Sciaridae	Dark-winged fungus gnats
Cecidomyiidae	Gall midges
Therevidae	Stiletto flies
Asilidae	Robber flies
Acroceridae	Small-headed flies
Bombyciidae	Bee flies
Empididae	Dance flies
Dolichopodidae	Long-legged flies
Phoridae	Humpedbacked flies
Pipunculidae	Big-headed flies
Syrphidae	Syrphid flies
Psilidae	Rust flies
Otitidae	Picture-winged flies
Tephritidae	Fruit flies
Sepsidae	Black scavenger flies
Sciomyzidae	Marsh flies
Chaemaemyiidae	Aphid flies
Lonchaeidae	Lonchaeid flies
Sphaeroceridae	Small dung flies
Chloropidae	Chloropid flies
Agromyzidae	Leaf-miner flies
Heleomyzidae	Heleomyzid flies
Trixoscelididae	Trixoscelidid flies
Anthomyiidae	Anthomyiid flies
Muscidae	House flies
Calliphoridae	Blow flies
Tachinidae	Tachinid flies
SIPHONAPTERA	
Publicidae	Fleas
HYMENOPTERA	
Xyelidae	Xyelid sawflies
Argidae	Argid sawflies
Diprionidae	Conifer sawflies
Tenthredinidae	Common sawflies
Braconidae	Braconid wasps
Ichneumonidae	Ichneumonid wasps

Table 2.3-227 (Continued)

ORDER Family	Common Name
HYMENOPTERA (Continued)	
Mymaridae	Fairyflies
Trichogrammatidae	Trichogrammatid wasps
Eulophidae	Eulophid wasps
Encyrtidae	Encyrtid wasps
Eupelmidae	Eupelmid wasps
Pteromalidae	Pteromalid wasps
Chalcididae	Chacid wasps
Figitidae	Figitid wasps
Cynipidae	Gall wasps
Proctotrupidae	Prototrupid wasps
Cerapharonidae	Cerapharonid wasps
Diapriidae	Diapriid wasps
Scelionidae	Scelionid wasps
Platygasteridae	Platygasterid wasps
Chrysididae	Cuckoo wasps
Bethylidae	Bethylid wasps
Dryinidae	Dryinid wasps
Tiphiidae	Tiphiid wasps
Mutillidae	Velvet ants
Formicidae	Ants
Vespidae	Paper wasps
Pompilidae	Spider wasps
Sphecidae	Sphecid wasps
Colletidae	Yellow-faced bees
Andreidae	Andrenid bees
Halicitidae	Halicitid bees
Megachilidae	Leafcutting bees
Apidae	Honey bees
SCORPIONIDA	Scorpions
CHELONETHIDA	Pseudoscorpions
SOLPUGIDA	Sun scorpions
ARANEIDA	Spiders
Dictynidae	Dictynid spiders
Amaurobiidae	Amaurobiid spiders
Pholcidae	Pholcids and cellar spiders
Theridiidae	Comb-footed spiders
Araneidae	Orb weavers
Agelenidae	Funnel-web spiders
Hahniidae	Hahniid spiders
Pisuridae	Nursery-web spiders
Lycosidae	Wolf spiders
Oxyopidae	Lynx spiders

Table 2.3-227 (Continued)

ORDER Family	Common Name
ARANEIDA (Continued)	
Gnaphosidae	Hunting spiders
Clubionidae	Sac spiders
Thomisidae	Crab spiders
Salticidae	Jumping spiders
PHALANGIDA	Harvestmen
ACARI	Ticks and mites
LITHOBIOMORPHA	Centipedes
GEOPHILOMORPHA	Centipedes

1/ Common names, correct spelling, and taxonomic order from:

Borror, D.J. and M.D. DeLong. 1971. An introduction to the study of insects. Holt, Rinehart and Winston. New York. 812 pages.

Table 2.3-228 Relative abundance and population density estimates for ground dwelling invertebrates collected by pitfall traps at site 1, Deerwood-Sandhill, during June, 1975 for ADOT

taxon	# collected	percent relative abundance **	density (#/M2)
SYNSPHYRA	17	7.30	1.35
COLLEMBOLA	14	6.01	0.12
COLEOPTERA	39	16.74	***
LEPIDOPTERA	13	5.44	0.22
HYMENOPTERA	46	19.74	***
ARANEIDA	28	12.02	0.80
PHALANGIDA	31	21.29	1.42
ACARI	23	9.87	0.22

* Zippin-effort regression method (Gist and Crossley, Jr., 1973)
** (# collected each taxon, site 1/# collected all taxa, site 1) X 100
*** assumptions of density estimation method not met

Table 2.3-229 Percentages of ground dwelling invertebrates within each feeding type collected by pitfall traps at each sampling site during June, 1975 for RBOSP

	Site 1	Site 2	Site 3	Site 4	Site 5
Herbivores	6	0	0	0	4
Flower feeders	0	0	0	0	0
Fungus feeders	0	0	0	0	0
Saprovore	36	90	62	92	23
Omnivores	20	2	10	5	30
Predators	27	2	20	1	21
Unknown	11	6	8	2	22

Table 2.3-230 ...ative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 1, ...ashwood-Hagerman, during July 1975 for PASNL

Taxon	...coll...ed	Percent ...lative abundance**	...nsity (#/m2)
...ARANEA	77	5.16	***
...ULA ...	130	8.69	***
...ONTOLEMA	10	0.71	0.21
...OCOCOLEMA	19	1.74	**
...OLOPHI...	91	6.1...	***
...OSOMATA	42	2.9...	***
...LAGMATA	2	0.21	***
...PTERA	19	1.35	***
...MENOPTERA	184	13.06	***
...A ...	100	9.25	6.55
...	33	6.59	1.22
...AL	454	32.00	***
...NVERTEBRATA	1	0.07	***

* catch-effort conversion method (Tiet and Crossley, Jr., 1975)
** (# collected each taxon, site 1/# collected all taxa, site 1) X 100
*** assumptions of density estimation method not met

Table 2.3-231 Numbers and percentages of invertebrates within each feeding type taken in pitfall trap samples at each site during July 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5	
	#	%	#	%	#	%	#	%	#	%
Herbivores	197	14.0	16	1.8	17	1.4	31	0.9	26	3.7
Flower feeders	0	0.0	0	0.0	0	0.0	0	0.0	00	0.0
Fungus feeders	7	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Saprovore	394	28.0	44	4.8	408	33.9	2671	77.9	287	40.7
Omnivores	184	13.2	85	9.3	91	7.6	504	14.7	230	32.6
Predators	156	11.2	28	3.1	83	6.9	56	1.6	57	8.1
Unknown	471	33.5	741	81.1	603	50.2	168	4.9	105	14.9

Table 2.3-232 [illegible] plotless sampling and collection density estimates for [illegible] within [illegible] collected by [illegible] at site 1, [illegible] through [illegible] 1977 for RXCB

[illegible]	[illegible] collected	Percent [illegible] abundance	Density (#/ha)
[illegible]	21	4.20	***
[illegible]	22	2.22	0.86
[illegible]	9	1.81	***
[illegible]	20	4.20	**
[illegible]	41	8.22	1.01
[illegible]	3	0.40	0.01
[illegible]	111	19.00	1.99
[illegible]	40	7.02	0.30
[illegible]	17	4.99	0.36
[illegible]	229	47.86	4.20
[illegible]	1	0.15	0.01

* Cobb-[illegible] expression method (Lim and Cressley, Jr., 1973)
** (# collected each taxon, site 1/# collected all taxa, site 1) X 100
*** assumptions of density estimation method not met

Table 2.3-233 Numbers and percentages of invertebrates within each feeding type taken in pitfall trap samples at each site during September 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5	
	#	%	#	%	#	%	#	%	#	%
Herbivores	49	6.6	4	1.8	3	0.7	42	10.0	11	4.9
Flower feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Fungus feeders	6	0.8	0	0.0	1	0.2	0	0.0	0	0.0
Saprovores	139	18.7	14	6.4	21	4.9	6	1.4	44	19.6
Omnivores	141	19.0	90	40.9	17	4.0	119	28.2	34	15.1
Predators	79	10.6	78	35.5	42	9.9	52	12.3	63	28.0
Unknown	329	44.3	34	15.4	341	80.3	203	48.1	73	32.4

Table 2.3-234 Results of litter d-vac invertebrate sampling at site 1, greasewood-sagebrush, during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	litter dry weight (gm)	# of invertebrates per kilogram litter
132	0	0.00	174.00	0.0
133	20	20.00	170.00	117.6
134	4	4.00	220.00	18.2
135	14	14.00	585.00	23.9
136	18	18.00	595.00	30.3

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-235 Average number of invertebrates collected from litter by the d-vac method at each sampling site during June, 1975 for ROSP

site	# of samples	avg. # of inverts. per kilogram litter	variance	std. error
1	5	30.0	2102.0	20.5
2	5	1.6	3.3	0.8
3	5	5.0	37.5	2.7
4	5	519.4	339477.0	260.6
5	5	126.9	10202.3	45.2

Table 2.3-236 Results of Litter D-vac sampling at each site during June, 1975 for RBOSP

ORDER Family	Common Name	Site 1 A[1]	Site 1 B[2]	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
THYSANURA											
Machilidae	jumping bristletails									1	1
COLLEMBOLA											
Isotomidae	elongate-bodied springtails							1	49		
Entomobryidae	elongate-bodied springtails							1	1	1	37
THYSANOPTERA	thrips	1	1							1	1
HEMIPTERA	true bugs	-	1					-	4	-	5
HOMOPTERA	hoppers	-	2			-	1	-	3	-	10
COLEOPTERA											
Carabidae	ground beetles	3	9					1	3	1	2
Carabidae-larvae	ground beetles	1	7			1	3				
Staphylinidae	rove beetles	2	2			1	1	1	1	1	1
Cleridae	checkered beetles							1	1	1	1
Anthicidae	antlike flower beetles	1	4								
Tenebrionidae	darkling beetles							1	1		
Melandryidae	false darkling beetles	1	1								
Chrysomelidae	leaf beetles	1	1								
Curculionidae	snout beetles	1	2			2	2			2	2
Unknown larvae		1	1			1	1			-	11
LEPIDOPTERA											
Hesperidae larvae	skippers							1	1		
Noctuidae larvae	armyworms & cutworms	-	2					-	2	1	1
Pyralidoidea larvae	plume moths, snout moths							1	1	1	1
Unknown larvae								1	1		

Table 2.3-236 (Continued)

ORDER Family	Common Name	Site 1 A[1]	Site 1 B[2]	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
DIPTERA											
Unknown larvae	flies					1	1			1	12
HYMENOPTERA											
Dryinidae (non-winged)	dryinid wasps							1	1		
Formicidae	ants	1	1	3	3	2	3	7	210	7	63
Formicidae (pupae)								1	64		
Unknown (winged)		-	8					1	1	1	1
CHELONETHIDA	pseudoscorpions									1	14
ARANEIDA											
Dictynidae	dictynid spiders	-	10					-	2	-	8
Gnaphosidae	hunting spiders	-	3								
Thomisidae	crab spiders							-	3		
Salticidae	jumping spiders							-	2		
Unknown						1	1	1	1		
PHALANGIDA	harvestmen	1	1								
ACARI	ticks & mites							-	19	-	26
GEOPHILOMORPHA	centipedes							-	1	1	2
			56		3		13		372		199

1/ A = Number of species groups

2/ B = Total number of individuals

Table 2.3-237 Percentages of invertebrates within each feeding type taken in Litter D-vac samples at each site during June, 1975 for RBOSP

	Site 1	Site 2	Site 3	Site 4	Site 5
Herbivores	16	0	23	2	8
Flower feeders	0	0	0	0	0
Fungus feeders	0	0	0	0	0
Saprovores	2	0	0	14	19
Omnivores	2	100	23	74	32
Predators	55	0	38	4	14
Unknown	25	0	16	7	27

2.3-238

Table 2.3-239

Table 2.3-240 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by litter D-vac sampling at all sites during July 1975 for REOSP

ORDER		Site 1		Site 2		Site 3		Site 4		Site 5	
		A	B	A	B	A	B	A	B	A	B
	Elongate-bodied swamp snails	0	0	0	0	1	55	1	0	0	0
	Elongate-bodied swamp snails	0	0	1	11	1	11			1	11
		1	2	0	0	1	1	0	0	1	12
		0	0	1	7	1	1	1	1	0	0
		0	0	0	0	0	0	1	1	0	0
		1	1	0	0	1	1	1	1	1	14
		1	1	0	0	1	1	1	1	0	0
	Leeches	0	0	0	0	0	0	1	0	1	1
		1	1	1	1	1	1	1	1	1	1
	Horned beetles	1	1	0	0	1	1	1	1	0	0
		0	0	1	1	1	1	1	1	0	0
		1	1	0	0	1	1	1	1	0	0
		1	1	0	0	1	1	1	1	0	0
		1	1	0	0	1	1	1	1	0	0
	Predator midges	1	1	0	0	1	1	1	1	1	1
	Moth midges	1	1	0	0	1	1	0	0	1	1
		1	0	1	1	1	1	1	1	1	2
		1	11	1	1	1	2	1	0	1	3
	Mites	0		0	0	0		1	0	0	0
				1	1	1	1			1	2
	Ants	2	10	1	2	3	133	1	0	1	12
	Springtails			1	11	1	2	1	0	1	17
						1	1				
			1					1	0	1	1

Table 2.3-240 (continued)

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5 A	 B
Lycosidae	wolf spiders	0	0	0	0	0	0	0	0	1	1
Gnaphosidae	hunting spiders	0	0	0	0	1	2	0	0	1	2
Thomisidae	crab spiders	0	0	0	0	1	1	0	0	1	1
Salticidae	jumping spiders	0	0	0	0	0	0	0	0	1	1
ACARI	ticks and mites										
Unknown		1	28	1	15	1	29	1	3	1	215
SUBCLASS COLLEMBOLA											
Unknown		0	0	0	0	1	1	0	0	1	1
	TOTALS	17	83	15	151	25	[illegible]	5	13	24	365

Table 2.3-241 Numbers and percentages of invertebrates within each feeding type taken in litter D-vac samples at each site during July 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5	
	#	%	#	%	#	%	#	%	#	%
Herbivores	2	2.4	6	4.6	5	2.1	1	6.7	6	1.6
Flower feeders	2	2.4	1	0.8	1	0.4	5	33.3	0	0.0
Fungus feeders	2	2.4	0	0.0	0	0.0	0	0.0	0	0.0
Saprovore	6	7.1	49	37.4	72	30.3	3	20.0	49	13.4
Omnivores	10	11.8	2	1.5	103	43.3	0	0.0	18	4.9
Predators	10	11.8	22	16.8	24	10.1	0	0.0	36	9.9
Unknown	53	62.4	51	38.9	33	13.9	6	40.0	256	70.1

Table 2.3-242 Average number of invertebrates collected from litter by the d-vac method at each sampling site during September 1975 for TROU

Site	Vegetation type	No. of samples	Avg. # of invertebrates per kilo gm litter	Variance	Std. error
1	greasewood-sagebrush	5	312.0	31769.2	79.7
2	pinyon-juniper (south slope)	5	47.0	1642.9	18.1
3	pinyon-juniper (north slope)	5	44.7	2933.4	24.2
4	sagebrush	5	30.0	3716.5	11.6
5	mixed brush	5	667.9	309403.5	279.5

Table 2.3-243 Results of litter d-vac invertebrate sampling at site 1, [illegible] wood-sagebrush, during September 1979 for [illegible]

[illegible]	[illegible] invertebrates per [illegible]	Adjusted [illegible]	Litter [illegible] dried (gm)	[illegible] of invertebrates per kilogram litter
[illegible]	96	96.49	[illegible].00	419.5
[illegible]	197	198.00	342.00	578.9
[illegible]	[illegible]	69.35	536.00	129.4
[illegible]	[illegible]	67.29	269.00	213.0
[illegible]	[illegible]	[illegible].41	199.00	399.0

[illegible] invertebrates [illegible] [illegible] calibration [illegible]

Table 2.3-244 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by litter D-vac sampling at all sites during September 1975 for RBOSP

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5 A	 B
[illegible]											
Unknown		1	14	0	0	0	0	0	0	0	0
[illegible]											
Entomobryidae	elongate-bodied springtails	0	0	0	0	1	13	0	0	0	0
Isotomidae	elongate-bodied springtails	0	0	1	3	0	0	0	0	1	53
Sminthuridae	globular springtails	1	2	0	0	0	0	0	0	0	0
[illegible]											
Unknown		1	217	0	0	1	12	0	0	0	0
Psocidae	psocids	0	0	1	2	0	0	0	0	0	0
[illegible]											
Unknown		1	2	1	3	1	2	0	0	1	4
[illegible]											
Unknown		1	10	0	0	0	0	1	1	1	4
[illegible]											
[illegible]		1	2	1	1	1	1	1	3	0	0
Cicadellidae	leafhoppers	0	0	0	0	0	0	0	0	1	3
[illegible]											
Unknown		0	0	1	9	0	0	0	0	1	15
Carabidae	ground beetles	1	1	0	0	1	3	0	0	1	2
Staphylinidae	rove beetles	2	6	1	1	1	6	0	0	0	0
Cleridae	checkered beetles	1	2	0	0	0	0	1	1	0	0
Histeridae	minute brown scavenger beetles	1	2	0	0	0	0	0	0	0	0
Pselaphidae	ant-like beetles	0	0	0	0	1	1	1	2	2	2
Chrysomelidae	leaf beetles	2	13	0	0	0	0	1	11	0	0
Curculionidae	snout beetles	2	2	0	0	2	4	1	1	2	4
[illegible]											
Unknown		1	2	0	0	0	0	0	0	1	1
[illegible]											
[illegible]		1		1	1	0	0	1	2	0	0
[illegible]											
Unknown		1	3	0	0	0	0	1	3	2	9
Mymaridae	chalcaproid wasps	1	5	0	0	0	0	0	0	0	0
[illegible]	ants	2	19	1	1	2	76	2	4	1	1
[illegible]	[illegible]										
[illegible]		0	0	1	1	1	3	0	0	1	8

Table 2.3-244 (continued)

Class/ Family	Common name	Site 1 A	Site 1 B	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
ARACHNIDA	spiders										
Unknown		0	0	1	12	2	10	1	1	1	4
Dictynidae	dictynid spiders	0	0	0	0	0	0	0	0	1	1
Clubionidae	hunting spiders	1	2	0	0	1	1	1	1	1	2
Linyphiidae	sheet spiders	1	1	1	0	0	0	0	0	1	2
Salticidae	jumping spiders	0	0	1	0	0	0	1	2	1	4
PHALANGIDA	harvestmen										
Unknown		0	0	0	0	0	0	1	0	0	0
ACARI	ticks and mites										
Unknown		1	186	1	73	1	57	1	27	1	499
ARTHROPLEURA											
Unknown		1	6	0	0	0	0	0	0	1	2
	TOTALS	85	400	12	107	16	104	15	59	22	630

Table 2.3-245 Numbers and percentages of invertebrates within each feeding type taken in litter D-vac samples at each site during September 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5	
	#	%	#	%	#	%	#	%	#	%
Herbivores	18	3.6	4	3.7	7	3.6	15	25.4	11	1.7
Flower feeders	7	1.4	0	0.0	0	0.0	0	0.0	1	0.2
Fungus feeders	2	0.4	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	233	46.8	5	4.7	26	13.4	2	3.4	60	9.5
Omnivores	19	3.8	1	0.9	76	39.2	4	6.8	1	0.2
Predators	18	3.6	14	13.1	28	14.4	5	8.5	32	5.1
Unknown	201	40.4	83	77.6	57	29.4	33	55.9	525	83.3

Table 2.3-246 Results of ground layer herbaceous sweep sampling at each site during June, 1975 for RBOSP

ORDER Family	Common Name	Site 1 A[1]	Site 1 B[2]	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
COLLEMBOLA											
Sminthuridae	globular springtails	1	3								
ORTHOPTERA											
Acrididae	short horned grasshoppers	1	1			1	1				
THYSANOPTERA	thrips	4	28								
HEMIPTERA											
Miridae	plant bugs	2	4	1	9	1	2			1	8
Lygaeidae	seed bugs	1	1								
Unknown immatures				1	2			1	1		
HOMOPTERA											
Cicadellidae	leafhoppers	4	29	1	2	2	3	1	1	2	4
Cicadellidae imm.	leafhoppers			1	2	1	2				
Delphacidae	delphacid planthoppers	1	1			1	5			1	1
Psyllidae	psyllids			3	6			1	1	1	3
Aphididae	aphids	1	2	1	2						
COLEOPTERA											
Scydmaenidae	antlike stone beetles			1	1						
Cantharidae	soldier beetles					1	1	1	1		
Cleridae	checkered beetles									1	5
Erotylidae	pleasing fungus beetles	1	1							1	1
Lathridiidae	minute brown scavenger beetles	1	1								
Coccinellidae	ladybird beetles			1	1						
Anthicidae	antlike flower beetles	1	8								
Ptinidae	spider beetles			1	2						
Chrysomelidae	leaf beetles	1	2			1	1				
Curculionidae	snout beetles	1	1							3	3
Unknown larvae										1	1

Table 2.3-246 (Continued)

ORDER Family	Common Name	Site 1 A[1]	Site 1 B[2]	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
LEPIDOPTERA											
Arctiidae larvae	tiger moths									1	1
Geometridae larvae	geometer moths									1	1
DIPTERA											
Empididae	dance flies					1	1				
Pipunculidae	big-headed flies	1	3								
Tephritidae	fruit flies									1	1
Chamaemyiidae	aphid flies			1	2						
Chloropidae	chloropid flies	1	1			1	1	1	3		
Agromyzidae	leaf-miner flies									1	7
Anthomyiidae	anthomyiid flies	1	1								
HYMENOPTERA											
Braconidae	braconid wasps	4	8			1	1			3	3
Ichneumonidae	ichneumonid wasps							1	1		
Mymaridae	fairyflies	1	1								
Eulophidae	eulophid wasps	1	2	3	9			1	2		
Encyrtidae	encyrtid wasps	1	1			1	1	1	1	1	1
Pteromalidae	pteromalid wasps	1	2	2	2	2	2	2	3	1	1
Scelionidae	scelionid wasps	1	1								
Formicidae	ants	4	17	3	7	2	8	3	6	5	8
Colletidae	yellow-faced bees									1	1
ARANEIDA											
Thomisidae	crab spiders	1	4					1	2		
Salticidae	jumping spiders			1	1						
ACARI	ticks & mites	1	4								
		38	127	21	48	16	29	14	22	26	50

[1] A = Number of species groups

[2] B = Total number of individuals

Table 2.3-247 Percentages of invertebrates within each feeding type in herbaceous sweep samples at all sites during June, 1975 for RBOSP

	Site 1	Site 2	Site 3	Site 4	Site 5
Herbivores	57	48	52	18	48
Flower feeders	13	23	18	45	28
Fungus feeders	2	0	0	0	2
Saprovores	0	2	0	0	0
Omnivores	13	15	28	27	16
Predators	3	4	3	9	0
Unknown	12	8	0	0	6

Table 2.3-248 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by ground layer herbaceous sweep sampling at all sites during July 1975 for RBOSP

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5 A	 B
THYSANURA											
Unknown		3	34	1	2	2	2	0	0	0	0
COLLEMBOLA											
Sminthuridae	globular springtails	1	7	1	22	1	5	0	0	1	15
ORTHOPTERA											
Acrididae	short-horned grasshoppers	1	5	0	0	0	0	1	1	1	1
PSOCOPTERA											
Unknown		0	0	0	0	0	0	1	1	0	0
THYSANOPTERA											
Unknown		1	23	0	0	0	0	0	0	2	16
HEMIPTERA											
Unknown		1	1	0	0	0	0	0	0	0	0
Miridae	plant bugs	2	7	1	2	0	0	5	30	11	46
Nabidae	damsel bugs	1	2	0	0	0	0	1	1	0	0
Lygaeidae	seed bugs	1	1	0	0	0	0	1	1	0	0
Cydnidae	burrower bugs	0	0	0	0	0	0	1	2	0	0
HOMOPTERA											
Cicadellidae	leafhoppers	6	112	2	26	4	5	3	37	4	45
Cercopidae	froghoppers	2	4	0	0	1	1	1	1	1	3
Delphacidae	delphacid planthoppers	0	0	0	0	2	3	1	1	0	0
Psyllidae	psyllids	0	0	1	1	0	0	1	2	1	3
Aphididae	aphids	1	2	0	0	0	0	0	0	1	142
COLEOPTERA											
Unknown		0	0	0	0	1	1	0	0	1	1
[illegible]		0	0	0	0	0	0	1	9	0	0
Cleridae	checkered beetles	0	0	2	2	0	0	1	4	2	10
Coccinellidae	ladybird beetles	1	1	0	0	1	1	0	0	0	0
Meloidae	blister beetles	0	0	0	0	0	0	1	6	1	1
Chrysomelidae	leaf beetles	1	1	0	0	0	0	0	0	1	3
Curculionidae	snout beetles	1	9	0	0	0	0	0	0	1	20
LEPIDOPTERA											
Geometridae	geometer moths	1	1	0	0	0	0	0	0	0	0
DIPTERA											
[illegible]	[illegible]	1	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0

Table 2.3-248 (continued)

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5 A	 B
Chironomidae	midges	2	8	0	0	0	0	0	0	0	0
Bibionidae	march flies	0	0	0	0	0	0	1	4	0	0
Asilidae	robber flies	1	1	0	0	0	0	0	0	1	2
Dolichopodidae	long-legged flies	0	0	0	0	0	0	1	1	0	0
Phoridae	humpbacked flies	1	1	0	0	0	0	0	0	0	0
Tephritidae	fruit flies	1	1	0	0	0	0	0	0	1	2
Sepsidae	black scavenger flies	1	2	0	0	0	0	0	0	0	0
Chloropidae	chloropid flies	5	115	1	2	0	0	0	0	1	14
Trixoscelididae	trixoscelidid flies	1	15	0	0	0	0	0	0	0	0
Anthomyiidae	anthomyiid flies	2	3	0	0	0	0	1	2	0	0
Calliphoridae	blow flies	1	1	0	0	0	0	0	0	0	0
Tachinidae	tachinid flies	1	1	0	0	0	0	0	0	0	0
HYMENOPTERA											
Braconidae	braconid wasps	3	8	0	0	0	0	1	1	1	1
Mymaridae	fairyflies	2	4	0	0	1	1	1	1	0	0
Eulophidae	eulophid wasps	4	17	1	4	2	3	0	0	5	8
Encyrtidae	encyrtid wasps	2	3	0	0	2	2	1	1	0	0
Pteromalidae	pteromalid wasps	5	5	1	1	0	0	4	9	4	6
Cynipidae	gall wasps	1	1	0	0	0	0	0	0	3	3
Ceraphronidae	ceraphronid wasps	0	0	0	0	0	0	0	0	1	2
Diapriidae	diapriid wasps	0	0	1	1	0	0	0	0	0	0
Platygasteridae	platygasterid wasps	1	1	0	0	0	0	0	0	1	1
Chrysididae	cuckoo wasps	1	1	0	0	0	0	0	0	0	0
Formicidae	ants	3	16	1	1	3	11	3	10	4	34
ARANEIDA											
Dictynidae	dictynid spiders	1	1	0	0	0	0	1	1	0	0
Tetragnathidae	long-jawed orbweavers	1	2	0	0	0	0	0	0	0	0
Thomisidae	crab spiders	0	0	0	0	0	0	1	2	1	3
Salticidae	jumping spiders	1	1	1	3	0	0	1	5	1	4
ACARI	ticks and mites										
Unknown		0	0	1	13	0	0	0	0	1	30
	TOTALS	66	419	15	80	20	35	35	133	53	439

Table 2.3-249 Numbers and percentages of invertebrates within each feeding type taken in ground layer herbaceous sweep samples at each site during July 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5	
	#	%	#	%	#	%	#	%	#	%
Herbivores	165	39.4	51	63.8	14	39.7	90	67.7	290	66.1
Flower feeders	157	37.5	7	8.8	6	17.1	3	2.3	29	6.6
Fungus feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	45	10.7	2	2.5	2	6.0	1	0.8	15	3.4
Omnivores	16	3.8	1	1.3	11	31.4	10	7.5	34	7.7
Predators	16	3.8	6	7.5	1	2.9	23	17.3	38	8.7
Unknown	20	4.8	13	16.3	1	2.9	6	4.5	33	7.5

Table 2.3-250 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by ground layer herbaceous sweep sampling at all sites during September 1975 for RBOSP

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5 A	 B
THYSANURA											
Unknown		1	1	1	3	0	0	0	0	0	0
COLLEMBOLA											
Sminthuridae	globular springtails	0	0	1	2	0	0	1	1	0	0
ORTHOPTERA											
Acrididae	short-horned grasshoppers	1	1	0	0	0	0	0	0	0	0
PHYSANOPODA											
Unknown		0	0	0	0	0	0	1	1	3	62
HEMIPTERA											
Anthocoridae	minute pirate bugs	1	3	0	0	0	0	0	0	0	0
Miridae	plant bugs	3	7	2	4	0	0	1	1	5	38
Nabidae	damsel bugs	1	2	0	0	0	0	1	8	0	0
Lygaeidae	seed bugs	1	103	0	0	0	0	0	0	0	0
Coreidae	leaf-foot bugs	0	0	0	0	0	0	1	1	0	0
HOMOPTERA											
Unknown		0	0	1	3	0	0	0	0	0	0
Cicadellidae	leafhoppers	2	5	3	66	1	7	1	3	4	9
Delphacidae	delphacid planthoppers	1	1	0	0	0	0	0	0	0	0
Issidae	issid planthoppers	0	0	0	0	0	1	2	0	0	0
Psyllidae	psyllids	0	0	1	7	1	72	0	0	1	5
Aphididae	aphids	0	0	1	51	1	5	0	0	1	1506
COLEOPTERA											
Unknown		0	0	0	0	0	0	0	0	1	2
Cleridae	checkered beetles	0	0	2	5	0	0	1	1	1	5
Nitidulidae	minute brown scavenger beetles	1	1	0	0	0	0	0	0	0	0
Coccinellidae	lady bird beetles	0	0	0	0	0	0	1	1	2	2
Melandryidae	false darkling beetles	0	0	0	0	0	0	0	0	1	2
Chrysomelidae	leaf beetles	4	6	1	3	0	0	0	0	1	1
Curculionidae	snout beetles	2	2	2	2	0	0	1	6	1	15
NEUROPTERA											
Chrysopidae	green lacewings	0	0	0	0	0	0	0	0	2	4
LEPIDOPTERA											
Unknown		1	1	0	0	0	0	0	0	0	0
Pyralidae	[illegible]	0	0	0	0	0	0	0	0	1	5

Table 2.3-250 (continued)

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5 A	 B
DIPTERA											
Unknown		0	0	0	0	0	0	0	0	1	1
Tipulidae	crane flies	0	0	0	0	0	0	0	0	1	1
Chironomidae	midges	0	0	1	1	0	0	0	0	0	0
Sciaridae	dark-winged fungus gnats	0	0	1	1	0	0	0	0	0	0
Cecidomyiidae	gall midges	0	0	0	0	0	0	1	1	0	0
Therevidae	stiletto flies	0	0	1	1	0	0	0	0	1	1
Phoridae	humpbacked flies	0	0	0	0	1	1	0	0	1	1
Pipunculidae	big-headed flies	0	0	0	0	1	1	0	0	0	0
Tephritidae	fruit flies	1	3	0	0	1	1	0	0	1	4
Sepsidae	black scavenger flies	1	1	0	0	0	0	0	0	1	3
Chloropidae	chloropid flies	2	10	1	1	1	1	0	0	2	5
Heleomyzidae	trimoncelidid flies	1	1	0	0	1	1	0	0	0	0
Anthomyiidae	anthomyiid flies	0	0	0	0	0	0	1	1	2	2
Tachinidae	tachinid flies	1	1	0	0	0	0	0	0	0	0
HYMENOPTERA											
Braconidae	braconid wasps	2	4	2	3	0	0	0	0	4	17
Ichneumonidae	ichneumonid wasps	2	2	0	0	0	0	0	0	0	0
Eulophidae	eulophid wasps	1	1	2	3	1	1	2	3	10	20
Encyrtidae	encyrtid wasps	1	6	0	0	0	0	0	0	1	3
Eurytomidae	eurytomid wasps	0	0	0	0	0	0	0	0	1	1
Pteromalidae	pteromalid wasps	3	3	4	5	0	0	2	4	3	47
Cynipidae	gall wasps	1	1	0	0	0	0	0	0	2	10
Platygasteroidea	platygasterid wasps	2	2	1	2	0	0	1	5	0	10
Formicidae	ants	0	0	3	3	0	0	2	3	2	2
Halictidae	halictid bees	1	1	0	0	0	0	0	0	0	0
ARANEIDA											
Thomisidae	crab spiders	0	0	1	1	0	0	0	0	1	9
Salticidae	jumping spiders	0	0	1	1	0	0	1	30	1	3
ACARI	ticks and mites										
Unknown		0	0	0	0	0	0	0	0	1	3
	TOTALS	38	175	35	156	9	90	20	77	62	1615

Table 2.3-251 Numbers and percentages of invertebrates within each feeding type taken in ground layer herbaceous sweep samples at each site during September 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5	
	#	%	#	%	#	%	#	%	#	%
Herbivores	126	72.8	117	75.0	84	93.3	19	24.7	1435	88.9
Flower feeders	30	17.3	17	10.9	2	2.2	8	10.4	72	4.5
Fungus feeders	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	2	1.2	5	3.2	1	1.1	1	1.3	4	0.2
Omnivores	0	0.0	5	3.2	0	0.0	3	3.9	24	1.5
Predators	10	5.8	12	7.7	0	0.0	44	57.1	68	4.2
Unknown	4	2.3	0	0.0	3	3.3	2	2.6	12	0.7

Table 2.3-252 Results of beating samples from plant species at sites 1, 2, and 3 during June, 1975 for RBOSP

ORDER Family	Common Name	Site 1 Greasewood-sage A[1]	Site 1 Greasewood-sage B[2]	Site 2 Pinyon A	Site 2 Pinyon B	SOUTH Juniper A	SOUTH Juniper B	Site 3 Pinyon A	Site 3 Pinyon B	NORTH Juniper A	NORTH Juniper B
ORTHOPTERA											
Acrididae	short-horned grasshoppers	1	1								
THYSANOPTERA	thrips	2	2								
HEMIPTERA											
Miridae	plant bugs	1	5			1	105			1	4
Reduviidae	assassin bug							1	3		
Unknown		1	1					1	2		
HOMOPTERA											
Cicadellidae immature	leafhoppers	2	8								
Aphididae	aphids	1	6	1	3						
Coccoidea (superfamily)	scale insects							1	1		
COLEOPTERA											
Coccinellidae	ladybird beetles	1	1	1	1					1	1
Anthicidae	antlike flower beetles	1	2			1	2				
Meloidae	blister beetles					1	1				
Chrysomelidae	leaf beetles									1	2
Curculionidae	snout beetles	2	2							1	3
Scolytidae	bark beetles			1	2						
Unknown		1	1			1	2				
LEPIDOPTERA	butterflies and moths	1	2			1	2				
HYMENOPTERA											
Ichneumonidae	ichneumonid wasps									1	1
Eulophidae	eulophid wasps	1	1								
Figitidae	figitid wasps	1	1								
Platygasteridae	platygasterid wasps	1	1								
Formicidae	ants	2	4	2	16						

Table 2.3-252 (Continued)

ORDER Family	Common Name	Site 1 Greasewood-sage A[1]	Site 1 Greasewood-sage B[2]	Site 2 Pinyon A	Site 2 Pinyon B	SOUTH Juniper A	SOUTH Juniper B	Site 3 Pinyon A	Site 3 Pinyon B	NORTH Juniper A	NORTH Juniper B
ARANEIDA											
Dictynidae	dictynid spiders					1	3		1	1	2
Araneidae	orb-weaver spiders			1	2	1	1		1		
Oxyopidae	lynx spiders					1	2				
Thomisidae	crab spiders				1	1	1		3	1	1
Salticidae	jumping spiders		2	1	1	1	1			1	2
ACARI		1	8	1	6	1	2	1	1	1	1
	TOTALS	20	48	8	32	11	122	4	12	9	17

[1] A = Number of species groups

[2] B = Total number of individuals

Table 2.3-253 Percentages of invertebrates within each feeding type taken in beating samples from plant species at sites 1, 2, and 3 during June, 1975 for RBOSP

	Site 1	Site 2		Site 3	
	Sage	Pinyon	Juniper	Pinyon	Juniper
Herbivores	52	15	87	25	53
Flower feeders	8	0	2	0	6
Fungus feeders	0	0	0	0	0
Saprovores	0	0	0	0	0
Omnivores	8	50	0	0	0
Predators	6	15	7	67	35
Unknown	26	20	4	8	6

Table 2.3-254 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by beating sampling at all sites during July 1975 for RBOSP

ORDER Family	Common name	Site 1 A	 B	Site 2P A	 B	Site 2J A	 B	Site 3P A	 B	Site 3J A	 B
COLLEMBOLA											
Sminthuridae	globular springtails	0	0	1	7	1	31	0	0	0	0
PSOCOPTERA											
Unknown		0	0	0	0	1	2	0	0	1	2
THYSANOPTERA											
Unknown		3	98	2	31	0	0	2	16	1	1
HEMIPTERA											
Unknown		0	0	1	44	1	13	1	51	0	0
Anthocoridae	minute pirate bugs	1	8	0	0	0	0	0	0	0	0
Miridae	plant bugs	8	255	0	0	0	0	0	0	2	5
Lygaeidae	seed bugs	1	2	0	0	0	0	0	0	0	0
HOMOPTERA											
Cicadellidae	leafhoppers	5	253	1	6	2	2	1	14	1	1
Psyllidae	psyllids	0	0	0	0	2	9	0	0	0	0
Aphididae	aphids	2	63	1	2	0	0	1	12	0	0
COLEOPTERA											
Unknown		2	2	1	1	0	0	0	0	0	0
Cleridae	checkered beetles	0	0	1	16	1	3	0	0	0	0
Elateridae	click beetles	0	0	0	0	0	0	1	1	0	0
Coccinellidae	ladybird beetles	1	3	1	1	0	0	0	0	0	0
Curculionidae	snout beetles	2	2	0	0	1	3	1	6	2	8
NEUROPTERA											
Hemerobiidae	brown lacewings	0	0	0	0	0	0	1	1	0	0
LEPIDOPTERA											
Unknown		1	3	0	0	1	2	1	2	0	0
DIPTERA											
Culicidae	mosquitoes	0	0	1	1	0	0	0	0	0	0
Chloropidae	chloropid flies	1	1	0	0	0	0	0	0	0	0
HYMENOPTERA											
Braconidae	braconid wasps	0	0	1	1	1	1	3	3	0	0
Eulophidae	eulophid wasps	0	0	2	4	1	1	1	2	0	0
Encyrtidae	encyrtid wasps	2	2	1	1	2	2	0	0	1	1
Eupelmidae	eupelmid wasps	0	0	1	1	1	2	0	0	1	1

Table 2.3-254 (continued)

ORDER Family	Common name	Site 1 A	 B	Site 2P A	 B	Site 2J A	 B	Site 3P A	 B	Site 3J A	 B
Pteromalidae	pteromalid wasps	0	0	2	2	0	0	1	2	0	0
Figitidae	figitid wasps	0	0	1	1	0	0	0	0	0	0
Cynipidae	gall wasps	0	0	0	0	1	1	0	0	0	0
Diapriidae	diapriid wasps	0	0	0	0	1	1	1	1	0	0
Scelionidae	scelionid wasps	0	0	3	3	0	0	0	0	0	0
Platygasteridae	platygasterid wasps	0	0	0	0	0	0	1	3	1	1
Formicidae	ants	2	7	2	6	0	0	2	3	1	1
ARANEIDA	spiders										
Unknown		0	0	0	0	0	0	1	1	0	0
Dictynidae	dictynid spiders	1	3	1	2	1	10	1	4	1	5
Oxyopidae	lynx spiders	0	0	0	0	0	0	1	1	0	0
Thomisidae	crab spiders	1	1	1	7	1	1	1	1	0	0
Salticidae	jumping spiders	1	6	1	2	1	1	0	0	0	0
ACARI	ticks and mites										
Unknown		1	68	0	0	1	12	0	0	1	9
	TOTALS	35	777	26	142	21	97	22	124	13	35

Table 2.3-255 Numbers and percentages of invertebrates within each feeding type taken in beating samples at each site during July 1975 for RBOSP

Feeding type	Site 1		Site 2P		Site 2J		Site 3P		Site 3J	
	#	%	#	%	#	%	#	%	#	%
Herbivores	621	79.9	93	65.2	59	60.7	100	80.6	15	42.9
Flower feeders	58	7.5	11	7.7	9	9.3	11	8.9	3	8.6
Fungus feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	0	0.0	0	0.0	2	2.1	0	0.0	2	5.7
Omnivores	7	0.9	6	4.2	0	0.0	3	2.4	1	2.9
Predators	21	2.7	31	21.8	15	15.5	10	8.1	5	14.3
Unknown	70	9.0	1	1.0	12	12.2	0	0.0	9	25.7

Table 2.3-256 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by beating sampling at all sites during September 1975 for RBOSP

ORDER Family	Common name	Site 1 A	 B	Site 2P A	 B	Site 2J A	 B	Site 3P A	 B	Site 3J A	 B
COLLEMBOLA											
Sminthuridae	globular springtails	1	3	1	47	1	2	0	0	1	2
PSOCOPTERA											
Unknown		0	0	1	1	0	0	0	0	2	16
THYSANOPTERA											
Unknown		2	25	3	6	2	2	1	1	0	0
HEMIPTERA											
Anthocoridae	minute pirate bugs	1	2	0	0	0	0	0	0	0	0
Miridae	plant bugs	2	45	1	6	2	2	1	1	0	0
Reduviidae	assassin bugs	0	0	0	0	0	0	3	6	1	1
HOMOPTERA											
Unknown		1	3	1	2	0	0	0	0	0	0
Cicadellidae	leafhoppers	3	22	1	1	0	0	0	0	0	0
Cercopidae	froghoppers	0	0	0	0	0	0	1	1	0	0
Psyllidae	psyllids	0	0	1	2	0	0	0	0	1	1
Aphididae	aphids	1	47	1	6	0	0	1	1	0	0
COLEOPTERA											
Unknown		0	0	0	0	0	0	0	0	1	1
Coccinellidae	ladybird beetles	0	0	0	0	0	0	2	2	0	0
Anthicidae	antlike flower beetles	0	0	1	1	0	0	0	0	0	0
Chrysomelidae	leaf beetles	0	0	0	0	1	1	0	0	0	0
Curculionidae	snout beetles	0	0	0	0	0	0	1	1	0	0
NEUROPTERA											
Hemerobiidae	brown lacewings	0	0	0	0	0	0	1	1	0	0
Chrysopidae	green lacewings	0	0	0	0	0	0	0	0	1	1
HYMENOPTERA											
Diprionidae	conifer sawflies	0	0	0	0	1	2	0	0	0	0
Braconidae	braconid wasps	0	0	0	0	0	0	0	0	1	1
Eulophidae	eulophid wasps	0	0	1	1	0	0	0	0	1	1
Encyrtidae	encyrtid wasps	0	0	1	1	0	0	0	0	1	1
Pteromalidae	pteromalid wasps	0	0	0	0	1	1	0	0	0	0
ARANEIDA	spiders										
Unknown		0	0	1	4	0	0	1	5	0	0
Dictynidae	dictynid spiders	1	1	1	5	1	3	1	2	1	3

Table 2.3-256 (continued)

ORDER Family	Common name	Site 1 A	 B	Site 2P A	 B	Site 2J A	 B	Site 3P A	 B	Site 3J A	 B
Oxyopidae	lynx spiders	0	0	0	0	0	0	0	0	1	1
Gnaphosidae	hunting spiders	0	0	1	5	0	0	0	0	1	1
Thomisidae	crab spiders	1	1	1	2	0	0	1	3	1	1
Salticidae	jumping spiders	1	2	1	2	0	0	1	3	0	0
ACARI Unknown	ticks and mites	1	22	0	0	1	3	0	0	0	0
	TOTALS	15	173	18	92	10	16	15	27	14	31

Table 2.3-257 Results of aerial sweep samples from plant species at sites 1, 2, and 3 during June, 1975 for RBOSP

ORDER Family	Common Name	Site 1 Sagebrush A[1]	Site 1 Sagebrush B[2]	Site 2 Pinyon A	Site 2 Pinyon B	SOUTH Juniper A	SOUTH Juniper B	Site 3 Pinyon A	Site 3 Pinyon B	NORTH Juniper A	NORTH Juniper B
COLLEMBOLA											
Sminthuridae	globular springtails					1	5				
THYSANOPTERA	thrips	2	17								
HEMIPTERA											
Miridae immature	plant bugs	1	55	1	1	1	74			1	12
Unknownimmature		1	3								
HOMOPTERA											
Psyllidae	psyllids	1	2								
COLEOPTERA											
Coccinellidae	ladybird beetles	1	3	1	1						
Meloidae	blister beetles			1	1						
Chrysomelidae	leaf beetles	1	1								
Curculionidae	Snout beetles			1	1						
LEPIDOPTERA						1	1				
DIPTERA											
Chironomidae	midges	1	1								
Asilidae	robber flies					1	1				
Tephritidae	fruit flies									1	1
Agromyzidae	leaf-miner flies	2	4			1	1				
Anthomyiidae	anthomyiid flies			1	1						
HYMENOPTERA											
Braconidae	braconid wasps	2	5	1	1						
Ichneumonidae	ichneumonid wasps	1	1								

Table 2.3-257 (Continued)

ORDER Family	Common Name	Site 1 Sagebrush A[1]	Site 1 Sagebrush B[2]	Site 2 Pinyon A	Site 2 Pinyon B	SOUTH Juniper A	SOUTH Juniper B	Site 3 Pinyon A	Site 3 Pinyon B	NORTH Juniper A	NORTH Juniper B
HYMENOPTERA (Cont.)											
Eulophidae	eulophid wasps					2	2				
Pteromalidae	pteromalid wasps	3	3								
Formicidae	ants					1	1	1	3		
ARANEIDA											
Araneidae	orb-weaver spiders			1	1					1	1
Thomisidae	crab spiders	1	2					1	1	1	2
Salticidae	jumping spiders	1	3					1	1	1	3
Unknown										1	1
	TOTALS	18	100	7	7	8	85	3	5	6	20

[1] A = Number of species groups

[2] B = Total number of individuals

Table 2.3-258 Percentages of invertebrates within each feeding type taken in aerial sweep samples from plant species at sites 1, 2, and 3 during June, 1975 for RBOSP

	Site 1	Site 2		Site 3	
	Sage	Pinyon	Juniper	Pinyon	Juniper
Herbivores	78	28	95	0	60
Flower feeders	13	28	3	0	0
Saprovores	1	0	0	0	0
Omnivores	0	0	1	60	0
Predators	8	43	1	40	35
Unknown	0	0	0	0	5

Table 2.3-259 Number of species groups (A) and total number of individuals (B) for invertebrate fauna collected by aerial survey sampling at all sites during July 1979 for LMSS

ORDER Family	Common name	Site 1 A	Site 1 B	Site 2D A	Site 2D B	Site 2J A	Site 2J B	Site 2P A	Site 2P B	Site 3J A	Site 3J B
COLLEMBOLA											
Unknown		1	2	0	0	0	0	0	0	0	0
Onychiuridae	globular springtails	0	0	1	1	1	7	0	0	0	0
PSOCOPTERA											
Unknown		0	0	1	1	0	0	1	2	0	0
HYMENOPTERA											
Unknown		3	42	0	0	0	0	1	2	1	1
HEMIPTERA											
Anthocoridae	minute pirate bugs	1	20	0	0	0	0	0	0	0	0
Miridae	plant bugs	0	33	1	2	2	6	3	5	1	2
Nabidae	damsel bugs	1	1	0	0	0	0	0	0	0	0
Pentatomidae	shield bugs	0	0	0	0	0	0	1	2	0	0
HOMOPTERA											
Cicadellidae	leafhoppers	2	126	1	1	1	1	1	3	0	0
Delphacidae	flat-headed planthoppers	1	1	0	0	0	0	0	0	0	0
Psyllidae	psyllids	2	4	0	0	0	0	0	0	0	0
Aphididae	aphids	1	7	1	1	0	0	2	7	1	1
COLEOPTERA											
Chrysomelidae	chrysomelid beetles	0	0	1	10	2	3	2	5	1	1
Coccinellidae	lady bird beetles	0	0	1	1	0	0	1	2	0	0
Curculionidae	snout beetles	1	4	0	0	1	1	0	0	1	4
NEUROPTERA											
Hemerobiidae	brown lacewings	0	0	0	0	0	0	0	0	1	1
HEMIPTERA											
Unknown		0	0	1	1	1	1	1	3	0	0
DIPTERA											
Ceratopogonidae	punkies	0	0	0	0	0	0	1	1	0	0
Anthomyiidae	root maggot flies	0	0	0	0	0	0	0	0	1	1
Tephritidae	fruit flies	1	1	0	0	0	0	0	0	0	0
Chloropidae	chloropid flies	1	2	0	0	0	0	1	1	0	0
HYMENOPTERA											
Braconidae	braconid wasps	1	2	1	1	1	1	0	0	1	1
Ichneumonidae	ichneumonids	1	1	0	0	1	1	0	0	1	1

Table 2.3-259 (continued)

ORDER Family	Common name	Site 1 A	Site 1 B	Site 2 A	Site 2 B	Site 3J A	Site 3J B	Site 22 A	Site 22 B	Site 23 A	Site 23 B
[illegible]	[illegible]	1	4		3	1	1	4	4	1	2
[illegible]	[illegible]	1	1	0	0	1	4	0	0	2	2
[illegible]	[illegible]	0	0	0	0	0	0	0	0	1	2
[illegible]	[illegible]	-	-	1	1	1	3	3	3	3	3
[illegible]	[illegible]	-	-	1	1	1	2	0	0	0	0
[illegible]	[illegible]	1	0	0	0	1	1	1	3	0	0
[illegible]	[illegible]	-	-	1	1	1	1	1	1	0	0
ARACHNIDA											
Dictynidae	Dictynid spiders	0	0	0	0	0	0	0	0	1	1
Oxyopidae	Lynx spiders	0	0	0	0	0	0	1	3	0	0
Thomisidae	Crab spiders	1	1	0	0	1	2	0	0	0	0
Salticidae	Jumping spiders	1	0	0	0	0	0	0	0	0	0
ACARI	Mites and ticks										
Unknown		1	0	0	0	1	2	0	0	0	0
	TOTAL	[illegible]	[illegible]	11	14	17	19	[illegible]	[illegible]	19	23

Table 2.3-260 Numbers and percentages of invertebrates within each feeding type taken in aerial sweep samples at each site during July 1975 for RBOSP

Feeding type	Site 1		Site 2P		Site 2J		Site 3P		Site 3J	
	#	%	#	%	#	%	#	%	#	%
Herbivores	223	74.3	5	16.1	17	43.5	21	40.4	10	40.0
Flower feeders	14	4.7	9	29.0	13	33.3	11	21.2	9	36.0
Fungus feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	2	0.7	2	6.5	0	0.0	2	3.8	0	0.0
Omnivores	5	1.7	3	9.7	0	0.0	1	1.9	0	0.0
Predators	50	16.7	12	38.7	7	17.9	16	30.8	6	24.0
Unknown	6	2.0	0	0.0	2	5.1	1	1.9	0	0.0

Table 2.3-261 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by aerial sweep sampling at all sites during September 1977 for RLOS

Order / Family	Species group	Site 1 A	Site 1 B	Site 11 A	Site 11 B	Site 12 A	Site 12 B	Site 22 A	Site 22 B	Site 33 A	Site 33 B
[illegible]	[illegible]	0	0	1	1	1	2	0	0	0	0
[illegible]		0	21	1	1	0	0	0	0	1	0
[illegible]	[illegible]	1	1	0	0	0	0	0	0	0	0
[illegible]	[illegible]	1	1	2	13	1	13	2	9	1	7
[illegible]	[illegible]	0	0	0	0	0	0	0	0	1	1
[illegible]		0	0	1	1	0	0	0	0	0	0
[illegible]	[illegible]	0	23	2	2	1	1	1	1	1	1
[illegible]	[illegible]	0	0	1	1	0	1	0	0	0	0
[illegible]	[illegible]	0	0	0	0	1	1	1	1	0	0
[illegible]	[illegible]	1	21	1	0	0	0	0	0	0	0
[illegible]	[illegible]	0	0	1	1	0	0	0	0	0	0
[illegible]	[illegible]	1	2	0	0	0	0	0	0	1	1
[illegible]		0	0	0	0	0	0	0	0	1	1
[illegible]	[illegible]	0	0	1	1	0	0	0	0	0	0
[illegible]		1	1	1	1	0	0	0	0	0	0
[illegible]	[illegible]	0	0	0	0	1	1	1	1	1	1
[illegible]	[illegible]	0	0	1	1	0	0	0	0	0	0
[illegible]	[illegible]	0	0	0	0	1	1	0	0	0	0
[illegible]	[illegible]	0	0	1	1	0	0	0	0	0	0
[illegible]	[illegible]	1	0	1	1	0	0	0	0	0	0
[illegible]	[illegible]	1	1	0	0	0	0	0	0	1	1
[illegible]	[illegible]	1	1	0	0	0	0	0	0	0	0
[illegible]	[illegible]	0	0	1	1	0	0	0	1	0	0
[illegible]	[illegible]	1	0	0	0	0	0	0	0	0	0

Table 2.3-261 (continued)

ORDER family	Common name	Site 1 A	Site 1 B	Site 22 A	Site 22 B	Site 23 A	Site 23 B	Site 32 A	Site 32 B	Site 33 A	Site 33 B
Proctotrupidae	proctotrupid wasps	0	0	1	1	0	0	0	0	1	1
Cynipidae	cynipid wasps	1	1	0	0	0	0	0	0	0	0
Scelionidae	scelionid wasps	1	1	0	0	0	0	0	0	0	0
Platygasteridae	platygasterid wasps	1	13	0	0	0	0	0	0	0	0
Formicidae	ants	0	0	1	1	0	0	0	0	0	0
ARANEIDA		0	0	0	0	0	0	1	2	1	1
Dictynidae	dictynid spiders	0	0	0	0	0	0	0	0	1	2
Oxyopidae	lynx spiders	1	2	1	1	0	0	0	0	0	0
Thomisidae	crab spiders	1	1	0	0	1	1	1	3	0	0
Salticidae	jumping spiders										
	TOTALS	21	172	21	30	15	47	15	21	12	29

Table 2.3-262 Numbers and percentages of invertebrates within each feeding type taken in aerial sweep samples at each site during September 1975 for RBOSP

Feeding type	Site 1		Site 2P		Site 2J		Site 3P		Site 3J	
	#	%	#	%	#	%	#	%	#	%
Herbivores	126	73.3	24	63.2	36	83.7	12	50.0	8	27.6
Flower feeders	31	18.0	6	15.8	3	7.0	1	4.2	10	34.5
Fungus feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	0	0.0	1	2.6	1	2.3	0	0.0	0	0.0
Omnivores	0	0.0	1	2.6	0	0.0	0	0.0	0	0.0
Predators	15	8.7	4	10.5	3	7.0	11	45.8	11	38.0
Unknown	0	0.0	2	5.3	0	0.0	0	0.0	0	0.0

Table 2.3-263 Results of Malaise trap sampling at each site during June, 1975 for RBOSP

ORDER Family	Common Name	Site 1 A[1]	Site 1 B[2]	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
PSOCOPTERA											
Trogiidae	booklice	1	4								
HEMIPTERA											
Miridae	plant bugs	1	31			1	8	1	4		
Lygaeidae	seed bugs	1	5								
Pentatomidae	stink bugs	1	1								
Unknown nymphs				1	4						
HOMOPTERA											
Membracidae	treehoppers	1	1								
Cicadellidae	leafhoppers	5	30	2	20	2	8	4	16	1	4
Delphacidae	delphacid planthoppers	1	1					1	4		
Psyllidae	psyllids	2	11	2	20			1	12	2	12
Aphidae	aphids	1	3								
COLEOPTERA											
Staphylinidae	rove beetles	2	5								
Scydmaenidae	antlike stone beetles			1	8						
Cantharidae	soldier beetles			1	4			1	4		
Lampyridae	fireflies	1	1								
Ostomidae	bark-gnawing beetles			1	4						
Cleridae	checkered beetles	1	1	1	4	1	12	1	8	1	4
Elateridae	click beetles									1	4
Lathridiidae	minute brown scavenger beetles	1	1								
Coccinellidae	ladybird beetles	2	31	1	4			1	4		
Anthicidae	antlike flower beetles	1	22								
Tenebrionidae	darkling beetles	1	2								
Chrysomelidae	leaf beetles			3	12	1	4	1	4		
Curculionidae	snout beetles	2	25								
NEUROPTERA											
Hemerobiidae	brown lace wings	1	1	1	4						

Table 2.3-263 (Continued)

ORDER Family	Common Name	Site 1 A[1]	Site 1 B[2]	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
LEPIDOPTERA											
Hesperidae	skippers	1	1								
Unknown adults		1	53	1	147	1	32	1	80	1	28
DIPTERA											
Tipulidae	crane flies	1	1								
Psychodidae	moth flies	1	12								
Chironomidae	midges	3	984	2	93	2	64	2	140	2	160
Simulidae	black flies	1	9	1	4					1	4
Bibionidae	march flies	2	28								
Mycetophilidae	fungus gnats	1	5	1	24	1	36				
Sciaridae	dark-winged fungus gnats	1	63	4	133	1	36	2	116	1	28
Cecidomyiidae	gall midges	3	274	1	76	1	36	1	92	1	32
Therevidae	stiletto flies	1	13	2	12	1	60			1	4
Asilidae	robber flies	2	12	2	5	1	8				
Dolichopodidae	long-legged flies	1	1								
Phoridae	humpbacked flies	1	45	1	16	1	8			1	12
Pipunculidae	big-headed flies	1	116	1	16						
Syrphidae	syrphid flies	3	195	3	24			1	28	2	8
Otitidae	picture-winged flies	1	1								
Tephritidae	fruit flies	1	4								
Sepsidae	black scavenger flies	1	4								
Sciomyzidae	marsh flies			1	1						
Lauxaniidae	lauxaniid flies										
Chamaemyiidae	aphid flies	1	121	1	84						
Lonchaeidae	lonchaeid flies					1	16			1	32
Chloropidae	chloropid flies	4	22			1	4				
Holeomyzidae	helomyzid flies			1	2						
Trixoscelididae	trixoscelidid flies	1	122	1	16	1	12			1	8
Anthomyiidae	anthomyiid	5	421	4	145					2	8
Muscidae	house flies	1	12								
Calliphoridae	blow flies	1	83							1	4
Tachinidae	tachinid flies	3	31	5	32			1	20		

Table 2.3-263 (Continued)

ORDER Family	Common Name	Site 1 A[1]	Site 1 B[2]	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
HYMENOPTERA											
Xyelidae	xyelid sawflies									1	4
Tenthredinidae	common sawflies			1	4						
Braconidae	braconid wasps	7	74	5	20	3	24	1	4	4	20
Ichneumonidae	ichneumonid wasps	11	209	6	34	2	12	6	32	3	20
Mymaridae	fairyflies			1	8						
Eulophidae	eulophid wasps	3	5	4	26	2	8	1	4		
Encyrtidae	encyrtid wasps	2	5								
Pteromalidae	pteromalid wasps	3	34	4	18	2	8	1	4	1	4
Chalcididae	chalcidid wasps	1	1	1	1						
Cynipidae	gall wasps	1	26								
Proctotrupidae	proctotrupid wasps	1	4								
Diapriidae	diapriid wasps	1	4								
Platygasteridae	platygasterid wasps	1	6								
Bethylidae	bethylid wasps									1	4
Formicidae	ants			1	4						
Vespidae	paper wasps	2	9								
Sphecidae	sphecid wasps	1	1								
Colletidae	yellow-faced bees	2	2								
Andrenidae	andrenid bees	1	1	2	5	4	28	1	4	1	4
Halictidae	halictid bees	4	65	2	34	2	8	2	8		
Apidae	bumble bees, honey bees	2	2	1	9	5	36	1	4		
	ACTUAL TOTAL	**111**	3254	74	1077	37	468	32	592	**31**	408
	ADJUSTED TOTAL	**111**	5206	74	2872	37	7488	32	4736	**31**	6528

[1] A = Number of species groups

[2] B = Total number of individuals

Table 2.3-264 Percent invertebrates taken within each feeding type in Malaise trap samples at all sites during June, 1975 for RBOSP

	Site 1	Site 2	Site 3	Site 4	Site 5
Herbivores	4	7	17	11	5
Flower feeders	66	69	62	74	70
Fungus feeders	0	0	0	0	0
Saprovores	4	2	2	0	4
Omnivores	0	0	0	0	0
Predators	3	4	3	3	2
Unknown	21	18	14	12	19

Table 2.3-265 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by Malaise trap sampling at all sites during July 1975 for RBOSP

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5 A	 B
ORTHOPTERA											
Acrididae	short-horned grasshoppers	0	0	1	4	0	0	0	0	0	0
PSOCOPTERA											
Trogiidae	psocids	1	32	0	0	0	0	0	0	0	0
HEMIPTERA											
Unknown		1	116	1	12	0	0	1	80	0	0
HOMOPTERA											
Unknown		0	0	2	64	0	0	1	608	0	0
Cicadellidae	leafhoppers	1	524	0	0	0	0	0	0	0	0
Aphididae	aphids	1	52	0	0	0	0	0	0	0	0
COLEOPTERA											
Unknown		0	0	0	0	0	0	1	96	0	0
Cleridae	checkered beetles	0	0	3	20	3	16	1	8	0	0
Buprestidae	metallic wood-boring beetles	0	0	0	0	1	4	0	0	0	0
Coccinellidae	ladybird beetles	2	140	1	4	1	4	1	4	0	0
Anthicidae	antlike flower beetles	1	132	0	0	0	0	0	0	0	0
Scarabaeidae	scarab beetles	0	0	0	0	2	16	0	0	0	0
Curculionidae	snout beetles	1	32	0	0	0	0	0	0	0	0
NEUROPTERA											
Hemerobiidae	brown lacewings	0	0	1	4	0	0	0	0	0	0
Myrmeleontidae	antlions	0	0	0	0	0	0	2	16	0	0
Raphidiidae	raphidiid snakeflies	0	0	0	0	1	8	0	0	0	0
LEPIDOPTERA											
Unknown		2	160	2	176	2	224	2	472	2	288
Pieridae	sulphurs, whites, and orange tips	0	0	0	0	0	0	1	4	0	0
Satyridae	satyrs and wood nymphs	0	0	0	0	1	4	0	0	0	0
Nymphalidae	brush-footed butterflies	0	0	0	0	0	0	1	8	0	0
Lycaenidae	gossamer-winged butterflies	0	0	0	0	1	12	0	0	1	8
Lasiocampidae	tent caterpillars and lappet moths	0	0	1	12	0	0	1	4	1	4
DIPTERA											
Tipulidae	crane flies	0	0	0	0	0	0	0	0	1	4
Culicidae	mosquitoes	1	28	0	0	1	4	0	0	0	0
Chironomidae	midges	2	392	1	12	2	84	2	172	2	212
Simuliidae	black flies	0	0	0	0	0	0	0	0	1	8

Table 2.3-265 (continued)

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5 A	 B
Mycetophilidae	fungus gnats	1	16	0	0	0	0	1	12	1	20
Sciaridae	dark-winged fungus gnats	1	80	1	4	1	4	1	16	1	48
Cecidomyiidae	gall midges	2	112	1	104	1	156	1	160	2	56
Therevidae	stiletto flies	1	4	1	16	1	20	1	16	2	8
Asilidae	robber flies	2	12	2	12	2	12	1	4	3	20
Acroceridae	small-headed flies	0	0	0	0	0	0	1	4	0	0
Bombyliidae	bee flies	3	68	1	4	2	20	2	12	1	8
Dolichopodidae	long-legged flies	2	16	0	0	1	4	1	4	0	0
Phoridae	humpbacked flies	1	88	1	4	1	24	1	12	1	48
Pipunculidae	big-headed flies	0	0	1	8	1	12	1	36	1	24
Syrphidae	syrphid flies	1	28	1	8	0	0	0	0	1	12
Psilidae	rust flies	0	0	0	0	0	0	1	8	0	0
Tephritidae	fruit flies	0	0	1	4	0	0	1	4	1	8
Sepsidae	black scavenger flies	0	0	0	0	1	4	0	0	1	92
Chamaemyiidae	aphid flies	1	84	1	12	1	8	1	68	0	0
Lonchaeidae	lonchaeid flies	0	0	0	0	0	0	0	0	1	92
Chloropidae	chloropid flies	4	272	1	12	3	44	5	124	0	0
Agromyzidae	leaf-miner flies	2	80	0	0	0	0	0	0	0	0
Trixoscelididae	trixoscelidid flies	1	28	0	0	0	0	0	0	0	0
Anthomyiidae	anthomyiid flies	4	1228	3	44	5	112	5	228	4	228
Calliphoridae	blow flies	0	0	0	0	0	0	0	0	1	4
Tachinidae	tachinid flies	3	96	3	20	2	20	3	40	3	60
HYMENOPTERA											
Unknown		1	8	0	0	0	0	0	0	1	12
Argidae	argid sawflies	0	0	1	4	0	0	0	0	0	0
Braconidae	braconid wasps	7	96	5	20	1	8	9	68	6	64
Ichneumonidae	ichneumonid wasps	8	152	1	4	3	12	8	124	9	84
Mymaridae	fairyflies	1	4	0	0	1	4	0	0	0	0
Eulophidae	eulophid wasps	3	20	0	0	2	8	1	4	0	0
Encyrtidae	encyrtid wasps	2	12	0	0	1	8	3	12	0	0
Pteromalidae	pteromalid wasps	2	12	0	0	2	12	2	24	7	84
Chalcididae	chalcid wasps	0	0	0	0	1	4	0	0	0	0
Figitidae	figitid wasps	1	4	0	0	0	0	1	4	1	4
Proctotrupidae	prototrupid wasps	2	28	0	0	0	0	0	0	0	0
Ceraphronidae	ceraphronid wasps	1	4	0	0	0	0	0	0	0	0

Table 2.3-265 (continued)

ORDER Family	Common name	Site 1 A	Site 1 B	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
Diapriidae	diapriid wasps	2	12	0	0	0	0	0	0	1	4
Scelionidae	scelionid wasps	1	4	0	0	0	0	1	4	0	0
Chrysididae	cuckoo wasps	0	0	0	0	1	20	1	8	0	0
Dryinidae	dryinid wasps	1	8	0	0	0	0	0	0	0	0
Tiphiidae	tiphiid wasps	0	0	1	40	1	32	1	20	0	0
Mutillidae	velvet ants	0	0	0	0	0	0	1	16	0	0
Formicidae	ants	3	92	0	0	0	0	3	36	5	36
Vespidae	paper wasps	1	4	0	0	0	0	1	4	0	0
Pompilidae	spider wasps	0	0	0	0	1	4	0	0	0	0
Sphecidae	sphecid wasps	7	80	2	8	9	64	2	12	7	32
Colletidae	yellow-faced bees	0	0	0	0	0	0	0	0	1	8
Halictidae	halictid bees	3	12	0	0	2	8	1	4	1	4
Megachilidae	leafcutting bees	0	0	0	0	4	16	3	12	0	0
Apidae	honey bees	0	0	0	0	1	4	1	4	1	8
	TOTALS	88	4372	41	636	67	1020	80	2576	72	1592

Table 2.3-266 Numbers and percentages of invertebrates within each feeding type taken in Malaise trap samples at each site during July 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5	
	#	%	#	%	#	%	#	%	#	%
Herbivores	608	13.9	84	13.2	20	2.0	624	24.2	8	0.5
Flower feeders	1596	36.5	324	50.9	608	59.6	1172	45.5	872	54.8
Fungus feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	120	2.7	4	0.6	44	4.3	12	0.5	144	9.0
Omnivores	92	2.1	0	0.0	0	0.0	36	1.4	36	2.3
Predators	208	4.8	40	6.3	60	5.9	60	2.3	112	7.0
Unknown	1748	40.0	184	28.9	288	28.2	672	26.1	420	26.4

Table 2.3-267 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by Malaise trap sampling at all sites during September 1975 for RBOSP

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5 A	 B
ORTHOPTERA											
Acrididae	short-horned grasshoppers	1	4	0	0	0	0	0	0	0	0
HEMIPTERA											
Unknown		1	36	1	24	1	12	1	36	0	0
HOMOPTERA											
Unknown		0	0	1	76	1	84	1	116	0	0
Cicadellidae	leafhoppers	1	76	0	0	0	0	0	0	0	0
Aphididae	aphids	1	8	0	0	0	0	0	0	0	0
COLEOPTERA											
Cleridae	checkered beetles	0	0	0	0	0	0	1	4	0	0
Coccinellidae	ladybird beetles	0	0	1	4	0	0	0	0	0	0
Scarabaeidae	scarab beetles	1	8	1	48	1	8	1	8	1	8
NEUROPTERA											
Hemerobiidae	brown lacewings	0	0	0	0	1	4	1	24	0	0
LEPIDOPTERA											
Unknown		1	164	1	64	1	44	2	128	2	116
Hesperiidae	skippers	0	0	0	0	1	4	0	0	0	0
DIPTERA											
Psychodidae	moth flies-sand flies	1	4	0	0	0	0	0	0	0	0
Chironomidae	midges	2	36	1	8	2	12	3	32	2	104
Simuliidae	black flies	0	0	1	4	0	0	1	4	1	8
Bibionidae	march flies	0	0	0	0	0	0	0	0	1	4
Mycetophilidae	fungus gnats	0	0	0	0	0	0	0	0	1	4
Sciaridae	dark-winged fungus gnats	1	16	1	4	1	8	1	16	1	12
Cecidomyiidae	gall midges	1	48	0	0	1	56	1	60	1	56
Therevidae	stiletto flies	1	44	0	0	1	8	1	12	1	4
Asilidae	robber flies	0	0	2	8	1	4	0	0	2	20
Bombyliidae	bee flies	0	0	1	4	1	4	2	8	0	0
Empididae	dance flies	0	0	0	0	0	0	1	4	0	0
Dolichopodidae	long-legged flies	2	12	0	0	2	8	0	0	0	0
Phoridae	humpbacked flies	2	24	1	12	1	8	0	0	1	28
Pipunculidae	big-headed flies	1	28	1	12	1	8	1	8	0	0
Syrphidae	syrphid flies	2	16	0	0	0	0	1	4	1	4
Tephritidae	fruit flies	0	0	0	0	0	0	1	4	1	8

Table 2.3-267 (continued)

ORDER / Family	Common name	Site 1 A	Site 1 B	Site 2 A	Site 2 B	Site 3 A	Site 3 B	Site 4 A	Site 4 B	Site 5 A	Site 5 B
Sepsidae	black scavenger flies	0	0	0	0	0	0	1	8	0	0
Chamaemyiidae	aphid flies	1	12	0	0	0	0	0	0	0	0
Lonchaeidae	lonchaeid flies	0	0	0	0	0	0	0	0	1	24
Chloropidae	chloropid flies	6	132	2	16	3	20	4	64	2	64
Agromyzidae	leaf-miner flies	1	20	0	0	0	0	0	0	0	0
Anthomyiidae	anthomyiid flies	4	288	2	96	3	84	3	284	3	204
Calliphoridae	blow flies	1	4	0	0	0	0	0	0	0	0
Tachinidae	tachinid flies	2	8	2	16	5	32	4	36	4	40
HYMENOPTERA											
Braconidae	braconid wasps	5	52	1	8	3	20	4	20	5	68
Ichneumonidae	ichneumonid wasps	7	80	1	4	2	8	5	20	4	24
Eulophidae	eulophid wasps	1	4	0	0	1	4	1	4	0	0
Encyrtidae	encyrtid wasps	1	16	0	0	1	4	1	16	1	8
Pteromalidae	pteromalid wasps	1	4	1	4	3	12	3	12	1	4
Figitidae	figitid wasps	1	4	0	0	0	0	0	0	0	0
Cynipidae	gall wasps	1	4	0	0	0	0	1	8	0	0
Diapriidae	diapriid wasps	0	0	0	0	1	4	0	0	0	0
Platygasteridae	platygasterid wasps	1	4	0	0	0	0	0	0	0	0
Bethylidae	bethylid wasps	0	0	0	0	0	0	0	0	1	4
Tiphiidae	tiphiid wasps	0	0	1	4	1	4	0	0	0	0
Formicidae	ants	4	240	0	0	0	0	2	28	2	32
Pompilidae	spider wasps	0	0	0	0	1	4	0	0	0	0
Sphecidae	sphecid wasps	2	8	0	0	1	4	0	0	0	0
Colletidae	yellow-faced bees	2	8	0	0	0	0	0	0	0	0
Halictidae	halictid bees	2	8	0	0	1	4	0	0	2	8
Apidae	honey bees	0	0	1	8	0	0	0	0	0	0
	TOTALS	62	1420	24	424	43	476	49	968	42	856

Table 2.3-268 Numbers and percentages of invertebrates within each feeding type taken in Malaise trap samples at each site during September 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5	
	#	%	#	%	#	%	#	%	#	%
Herbivores	132	9.3	0	0.0	92	19.3	128	13.2	4	0.5
Flower feeders	600	42.3	212	50.0	176	37.0	356	36.8	452	52.8
Fungus feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	16	1.1	60	14.2	16	3.4	8	0.8	36	4.2
Omnivores	240	16.9	0	0.0	0	0.0	36	3.7	32	3.7
Predators	20	1.4	20	4.7	36	7.6	48	5.0	32	3.7
Unknown	412	29.0	132	31.1	156	32.8	392	40.5	300	35.0

Table 2.3-269 Results of trap d-vac invertebrate sampling from rabbitbrush (Chrysothamnus nauseosus), at site 1, greasewood-sagebrush, during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	plant diameter(M)	plant volume(M3)	# of invertebrates per cubic meter
21	31	38.74	0.58	0.102160	379.2
22	23	28.74	0.46	0.050965	564.0
23	22	27.49	0.66	0.150533	182.6
24	15	18.74	0.33	0.018817	996.2
25	70	87.48	0.43	0.041630	2101.3

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-270 Average number of invertebrates collected from selected plant species by the trap d-vac method at each sampling site during June, 1975 for RBOSP

site	vegetation type	plant species	# of samples	avg. # of inverts. per cubic meter	variance	std. error
1	greasewood-sagebrush	Chrysothamnus nauseosus	5	844.6	583940.2	341.7
2	pinyon-juniper (south slope)	Atriplex confertifolia	5	277.7	50199.2	100.2
3	pinyon-juniper (north slope)	Artemisia tridentata	5	2809.4	22761698.2	2133.6
4	sagebrush	Artemisia tridentata	5	235.8	10742.6	46.4
5A	mixed brush	Amelanchier utahensis	5	733.9	967806.4	440.0
5B	mixed brush	Symphoricarpos oreophilus	5	732.3	316603.4	251.6

Table 2.3-271 Results of Trap D-vac sampling of plant species at each site during June, 1975 for RBOSP

ORDER Family	Common Name	Site 1 Chrysothamnus nauseosus		Site 2 Atriplex confertifolia		Site 3 Artemisia tridentata		Site 4 Artemisia tridentata		Site 5A Amelanchier utahensis		Site 5B Symphoricarpos oreophilus	
		A*	B**	A	B	A	B	A	B	A	B	A	B
ORTHOPTERA													
Gryllacrididae	longhorned grasshoppers									1	1		
THYSANOPTERA	thrips	3	50	1	3			2	3	1	1	1	4
HEMIPTERA													
Miridae nymph	plant bugs			1	1			1	2				
Tingidae	lace bugs			1	1			1	1			1	1
Tingidae nymph	lace bugs	1	3										
Aradidae	flat bugs									1	1		
Lygaeidae	seed bugs							1	1	1	1	1	1
Unknown nymph		1	3					1	5			1	2
HOMOPTERA													
Cicadellidae	leafhoppers	3	3	1	4			2	3				
Cicadellidae nymph	leafhoppers	2	30	3	4	1	1	2	2			2	5
Delphacidae	delphacid planthoppers	1	10					3	6				
Psyllidae	psyllids							1	1	1	1		
Aphididae	aphids	1	6									1	1
Coccoidea (superfamily)	scale insects	1	5	1	8					1	2	1	1
Unknown nymphs		1	4					1	1				
COLEOPTERA													
Ostomidae	bark-gnawing beetles					1	1						
Cleridae	checkered beetles									1	2		
Elateridae	click beetles			1	2	2	2	1	1	1	1		

Table 2.3-271 (Continued)

ORDER		Site 1 Chrysothamnus nauseosus		Site 2 Atriplex conferitolia		Site 3 Artemisia tridentata		Site 4 Artemisia tridentata		Site 5A Amelanchier utahensis		Site 5B Symphoricarpos oreophilus	
Family	Common Name	A*	B**	A	B	A	B	A	B	A	B	A	B
COLEOPTERA (Cont.)													
Coccinellidae	ladybird beetles							2	6	1	1		
Anthicidae	antlike flower beetles	1	35										
Meloidae	blister beetles											1	1
Scrabaeidae	scarab beetles							1	1				
Chrysomelidae	leaf beetles	1	1					1	1				
Curculionidae	snout beetles	2	16	1	2	1	10	1	2	1	6	4	8
LEPIDOPTERA													
Arctiidae larvae	tiger moths	1	1										
Noctuidae	armyworms, cutworms											1	1
Noctuidae larvae	armyworms, cutworms					1	1	2	6	1	5	1	2
Geometridae	geometer moths									1	1		
Superfamily Pyralidoidea larvae								1	2				
Pterophoridae larvae	plume moths					1	1						
Superfamily Tortricoidea larvae				1	15	1	2						
Unknown larvae		1	1	1	1	1	1	1	6				
DIPTERA													
Chironomidae	non-biting midges					1	1						
Cecidomyidae	gall midges					1	1					1	2
Therevidae larvae	stiletto flies					1	1			1	1	1	4
Phoridae	humpbacked flies	1	2										
HYMENOPTERA													
Braconidae	braconid wasps	1	1	1	1							2	2
Ichneumonidae	ichneumonid wasps							1	1				
Eulophidae	eulophid wasps	2	2	1	1								
Pteromalidae	pteromalid wasps	1	1									1	1

Table 2.3-271 (Continued)

ORDER / Family	Common Name	Site 1 Chrysothamnus nauseosus A*	Site 1 Chrysothamnus nauseosus B**	Site 2 Atriplex confertifolia A	Site 2 Atriplex confertifolia B	Site 3 Artemisia tridentata A	Site 3 Artemisia tridentata B	Site 4 Artemisia tridentata A	Site 4 Artemisia tridentata B	Site 5A Amelanchier utahnesis A	Site 5A Amelanchier utahnesis B	Site 5B Symphoricarpos oreophilus A	Site 5B Symphoricarpos oreophilus B
HYMENOPTERA (cont.)													
Ceraphronidae	ceraphronid wasps											1	1
Diapriidae	diapriid wasps	2	2	1	1			1	1				
Platygasteridae	platygasterid wasps	3	6										
Dryinidae	dryinid wasps							1	1				
Unknown		1	1										
PHALANGIDA	harvestmen	1	1										
TOTAL		32	184	14	43	12	22	26	53	13	24	21	37

* A = Number of species groups

** B = Total number of individuals

Table 2.3-272 Percentages of invertebrates within each feeding type taken in Trap D-vac samples at each site during June, 1975 for RBOSP

	Site 1	Site 2	Site 3	Site 4	Site 5A	Site 5B
Herbivores	91.0	93.0	81.8	83.0	87.5	70.3
Flower feeders	-	-	4.6	-	4.2	2.7
Fungus feeders	-	-	4.6	-	-	5.0
Saprovores	2.0	-	-	-	-	-
Omnivores	-	-	-	-	-	-
Predators	6.5	7.0	9.0	17.0	8.3	22.0
Unknown	1.0	-	-	-	-	-

Table 2.3-273 Results of trap d-vac invertebrate sampling from rabbitbrush (Chrysothamnus nauseosus) at site 1, greasewood-sagebrush, during July 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
213	26	26.00	0.66	0.150533	172.7
214	16	16.00	0.23	0.006288	2544.6
215	4	4.00	0.23	0.006288	636.1
216	11	11.00	0.33	0.018817	584.6
217	50	50.00	0.43	0.042213	1184.5

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-274 Average number of invertebrates collected from selected plant species by the trap d-vac method at each sampling site during July 1975 for RD03P

Site	Vegetation type	Plant species	# of Samples	Avg. # of inverts. per cubic meter	Variance	Std. error
1	greasewood-sagebrush	Chrysothamnus nauseosus	5	1024.5	851519.7	412.7
2	pinyon-juniper (south slope)	Atriplex confertifolia	5	789.2	710923.2	377.1
3	pinyon-juniper (north slope)	Artemesia tridentata	5	106.9	3432.9	26.2
4	sagebrush	Artemesia tridentata	5	299.0	209668.2	204.3
5A	mixed brush	Amelanchier utahensis	5	133.9	19093.5	61.8
5B	mixed brush	Symphoricarpos oreophilus	5	344.9	210026.2	205.0

Table 2.3-275 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by trap D-vac sampling at all sites during July 1975 for RBOSP

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5A A	 B	Site 5B A	 B
COLLEMBOLA													
Sminthuridae	globular springtails	0	0	0	0	2	4	0	0	0	0	0	0
ORTHOPTERA													
Acrididae	short-horned grasshoppers	0	0	1	1	0	0	0	0	0	0	1	1
THYSANOPTERA													
Unknown		5	37	1	1	0	0	1	4	1	1	1	1
HEMIPTERA													
Miridae	plant bugs	1	1	1	1	0	0	0	0	1	2	0	0
Cydnidae	burrower bugs	0	0	1	3	0	0	0	0	0	0	0	0
HOMOPTERA													
Unknown		1	1	1	1	0	0	1	3	0	0	0	0
Cicadellidae	leafhoppers	4	11	3	14	0	0	5	7	3	3	1	1
Cercopidae	froghoppers	1	1	0	0	0	0	0	0	0	0	0	0
Aphididae	aphids	1	1	0	0	1	1	0	0	1	1	1	1
COLEOPTERA													
Ostomidae	bark-gnawing beetles	0	0	0	0	0	0	1	1	0	0	0	0
Cleridae	checkered beetles	1	1	1	3	1	1	0	0	0	0	1	1
Coccinellidae	ladybird beetles	1	1	0	0	1	1	2	4	0	0	0	0
Anthicidae	antlike flower beetles	1	15	0	0	0	0	0	0	0	0	0	0
Melandryidae	false darkling beetles	1	7	0	0	0	0	0	0	0	0	0	0
Anobiidae	anobiid beetles	0	0	1	1	0	0	0	0	1	1	0	0
Chrysomelidae	leaf beetles	0	0	1	1	1	1	0	0	0	0	0	0
Curculionidae	snout beetles	2	20	1	1	2	3	2	6	1	1	1	3
LEPIDOPTERA													
Unknown		0	0	2	3	0	0	0	0	0	0	0	0
Noctuidae	cutworm moths	1	2	0	0	0	0	0	0	1	1	1	1
Coleophoridae	casebearers	1	1	0	0	0	0	0	0	0	0	0	0
DIPTERA													
Psychodidae	moth flies-sand flies	0	0	0	0	0	0	0	0	1	1	0	0
Culicidae	mosquitoes	0	0	1	2	0	0	0	0	0	0	0	0
Chironomidae	midges	0	0	3	22	0	0	1	1	1	1	1	3
Ceratopogonidae	gall midges	0	0	0	0	0	0	0	0	1	1	0	0
Sphaeroceridae	small dung flies	1	2	0	0	0	0	0	0	0	0	0	0
Anthomyiidae	anthomyiid flies	0	0	1	2	0	0	0	0	0	0	0	0

Table 2.3-275 (continued)

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5A A	 B	Site 5B A	 B
HYMENOPTERA													
Diprionidae	conifer sawflies	0	0	0	0	0	0	0	0	0	0	1	1
Braconidae	braconid wasps	0	0	1	1	1	1	0	0	0	0	0	0
Cynipidae	gall wasps	1	1	0	0	0	0	0	0	0	0	0	0
Platygasteridae	platygasterid wasps	1	2	0	0	1	4	0	0	0	0	0	0
Bethylidae	bethylid wasps	0	0	1	3	0	0	0	0	0	0	0	0
Diapriidae	diapriid wasps	1	3	0	0	0	0	0	0	0	0	0	0
	TOTALS	25	107	21	60	10	16	13	26	12	13	9	13

Table 2.3-276 Numbers and percentages of invertebrates within each feeding type taken in trap D-vac samples at each site during July 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5A		Site 5B	
	#	%	#	%	#	%	#	%	#	%	#	%
Herbivores	82	76.6	24	40.0	9	56 .3	20	76.9	10	76.9	9	69.2
Flower feeders	3	2.8	29	48.3	5	31.3	1	3.8	1	7.7	3	23.1
Fungus feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Omnivores	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Predators	5	4.7	5	8.3	2	12.5	5	19.2	1	7.7	1	7.7
Unknown	17	15.9	2	3.3	0	0.0	0	0.0	1	7.7	0	0.0

Table 2.3-277 Results of trap d-vac invertebrate sampling from rabbitbrush (Chrysothamnus nauseosus) at site 1, greasewood-sagebrush, during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
303	23	56.00	0.25	0.008580	6526.6
304	9	21.91	0.31	0.014856	1475.0
305	34	82.78	0.61	0.118847	696.5
306	23	56.00	0.66	0.150533	372.0
307	17	41.39	0.46	0.049974	828.3

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-278 Average number of invertebrates collected from selected plant species by the trap d-vac method at each sampling site during September 1975 for RBOSP

Site	Vegetation type	Plant species	# of Samples	Avg. # of inverts. per cubic meter	Variance	Std. error
1	greasewood-sagebrush	Chrysothamnus nauseosus	5	1979.7	6621531.0	1150.8
2	pinyon-juniper (south slope)	Atriplex confertifolia	5	2035.8	6579342.3	1147.1
3	pinyon-juniper (north slope)	Artemesia tridentata	5	12899.7	238060772.4	6900.2
4	sagebrush	Artemesia tridentata	5	6931.7	120719484.2	4913.6
5A	mixed brush	Amelanchier utahensis	5	2698.4	10768185.1	1467.5
5B	mixed brush	Symphoricarpos oreophilus	5	2118.6	3540595.4	841.5

Table 2.3-279 Number of species groups (A) and total number of individuals (B) for invertebrate taxa collected by trap D-vac sampling at all sites during September 1975 for RBOSP

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5A A	 B	Site 5B A	 B
COLLEMBOLA													
Sminthuridae	globular springtails	1	1	1	2	0	0	0	0	1	4	1	25
ORTHOPTERA													
Acrididae	short-horned grasshoppers	0	0	0	0	0	0	0	0	0	0	1	0
THYSANOPTERA													
Unknown		4	51	1	3	0	0	1	1	2	7	3	17
HEMIPTERA													
Miridae	plant bugs	1	1	0	0	0	0	0	0	2	8	1	1
Nabidae	damsel bugs	0	0	0	0	0	0	0	0	1	1	0	0
Reduviidae	assassin bugs	0	0	0	0	0	0	0	0	1	1	0	0
Piesmatidae	ash-grey leaf bugs	0	0	0	0	0	0	0	0	0	0	1	2
Lygaeidae	seed bugs	1	1	0	0	0	0	0	0	0	0	1	1
HOMOPTERA													
Unknown		1	2	1	7	1	11	0	0	2	8	1	4
Cicadellidae	leafhoppers	8	14	3	4	1	1	3	5	8	12	3	5
Delphacidae	delphacid planthoppers	1	2	0	0	0	0	0	0	1	5	1	2
Aphididae	aphids	0	0	0	0	1	1	1	1	1	8	1	8
COLEOPTERA													
Ostomidae	bark-gnawing beetles	0	0	0	0	0	0	1	1	0	0	0	0
Cleridae	checkered beetles	1	7	1	1	0	0	0	0	1	1	0	0
Coccinellidae	ladybird beetles	0	0	0	0	1	2	0	0	0	0	0	0
Anthicidae	antlike flower beetles	1	1	0	0	0	0	0	0	1	1	1	3
Melandryidae	false darkling beetles	0	0	0	0	0	0	1	1	0	0	0	0
Chrysomelidae	leaf beetles	1	1	2	5	0	0	0	0	1	1	1	1
Curculionidae	snout beetles	2	20	2	2	1	8	2	2	2	2	4	8
NEUROPTERA													
Chrysopidae	green lacewings	0	0	0	0	0	0	0	0	0	0	1	1
LEPIDOPTERA													
Unknown		0	0	0	0	0	0	1	1	3	6	0	0
Gracilariidae	leaf blotch miners	1	1	0	0	0	0	0	0	0	0	0	0
DIPTERA													
Mycetophilidae	fungus gnats	0	0	0	0	0	0	0	0	1	1	0	0
Therevidae	stiletto flies	0	0	0	0	1	5	0	0	0	0	0	0
Phoridae	humpbacked flies	0	0	0	0	0	0	0	0	0	0	1	2

Table 2.3-279 (continued)

ORDER Family	Common name	Site 1 A	 B	Site 2 A	 B	Site 3 A	 B	Site 4 A	 B	Site 5A A	 B	Site 5B A	 B
Chloropidae	chloropid flies	0	0	0	0	0	0	0	0	0	0	1	1
Anthomyiidae	anthomyiid flies	1	1	0	0	0	0	0	0	0	0	0	0
HYMENOPTERA													
Unknown		0	0	0	0	0	0	1	2	0	0	0	0
Braconidae	braconid wasps	0	0	0	0	0	0	0	0	1	1	3	2
Eulophidae	eulophid wasps	0	0	1	0	0	0	0	0	0	0	4	4
Pteromalidae	pteromalid wasps	0	0	0	0	0	0	0	0	1	1	0	0
Cynipidae	gall wasps	0	0	0	0	0	0	0	0	1	1	0	0
Ceraphronidae	ceraphronid wasps	0	0	0	0	0	0	0	0	0	0	2	3
Diapriidae	diapriid wasps	2	3	0	0	0	0	0	0	0	0	0	0
Platygasteridae	platygasterid wasps	0	0	0	0	0	0	0	0	1	1	0	0
	TOTALS	26	106	12	24	6	28	11	14	32	70	32	90

Table 2.3-280 Numbers and percentages of invertebrates within each feeding type taken in trap D-vac samples at each site during September 1975 for RBOSP

Feeding type	Site 1		Site 2		Site 3		Site 4		Site 5A		Site 5B	
	#	%	#	%	#	%	#	%	#	%	#	%
Herbivores	93	87.7	21	87.5	21	75.0	11	78.6	54	77.1	49	54.4
Flower feeders	3	2.8	0	0.0	0	0.0	1	7.1	7	10.0	10	11.1
Fungus feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	1	0.9	2	8.3	0	0.0	0	0.0	4	5.7	27	30.0
Omnivores	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Predators	7	6.6	1	4.2	7	25.0	0	0.0	4	5.7	1	1.1
Unknown	2	1.9	0	0.0	0	0.0	2	14.3	1	1.4	3	3.3

Table 2.3-281 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 2, pinyon-juniper (south slope), during June, 1975 for RBOSP

taxon	# collected	relative abundance**	density (#/M2)
THYSANURA	7	0.41	0.25
COLLEMBOLA	1525	89.13	22.92
COLEOPTERA	14	0.82	0.18
LEPIDOPTERA	2	0.12	***
HYMENOPTERA	39	2.28	2.83
SCORPIONIDA	2	0.12	0.02
CHELONETHIDA	1	0.06	0.01
ARANEIDA	20	1.17	***
ACARI	101	5.90	***

* catch-effort regression method (Gist and Crossley, Jr., 1973)
** (# collected each taxon, site 2/# collected all taxa, site 2) X 100
*** assumptions of density estimation method not met

Table 2.3-282 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 2, pinyon-juniper (south slope), during July 1975 for RBOSP

Taxon	# collected	Relative abundance**	Density (#/M2)
THYSANURA	14	1.53	***
COLLEMBOLA	22	2.41	***
ORTHOPTERA	6	0.66	0.23
COLEOPTERA	25	2.74	0.32
HYMENOPTERA	85	9.31	1.35
SCORPIONIDA	1	0.11	0.01
SOLPUGIDA	1	0.11	0.01
ARANEIDA	22	2.41	***
ACARI	737	80.72	6.49

* catch-effort regression method (Gist and Crossley, Jr.,1973)
** (# collected each taxon, site 2/# collected all taxa, site 2) X 100
*** assumptions of density estimation method not met

Table 2.3-283 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 2, pinyon-juniper (south slope), during September 1975 for RBOSP

Taxon	# collected	Relative abundance**	Density (#/M2)
THYSANURA	5	2.28	***
COLLEMBOLA	6	2.74	0.07
ORTHOPTERA	1	0.46	0.01
HEMIPTERA	9	4.11	0.13
COLEOPTERA	13	5.94	0.14
DIPTERA	23	10.50	0.31
HYMENOPTERA	90	41.10	1.29
ARANEIDA	72	32.88	0.95

* catch-effort regression method (Gist and Crossley, Jr., 1973)
** (# collected each taxon, site 2/# collected all taxa, site 2) X 100
*** assumptions of density estimation method not met

Table 2.3-284 Results of litter d-vac invertebrate sampling at site 2, pinyon-juniper (south slope), during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	litter dry weight (gm)	# of invertebrates per kilogram litter
127	0	0.00	499.00	0.0
128	0	0.00	398.00	0.0
129	1	1.00	486.00	2.1
130	1	1.00	388.00	2.6
131	1	1.00	236.00	4.2

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-285 Results of litter d-vac invertebrate sampling at site 2, pinyon-juniper (south slope), during July 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Litter dry Weight (gm)	# of invertebrates per kilogram litter
263	38	38.00	780.00	48.7
264	52	52.00	960.00	54.2
265	11	11.00	1110.00	9.9
266	5	5.00	1100.00	4.5
267	25	25.00	492.00	50.8

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-286 Results of litter d-vac invertebrate sampling at site 2, pinyon-juniper (south slope), during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Litter dry Weight (gm)	# of invertebrates per kilogram litter
390	14	14.80	576.00	25.7
391	9	9.51	870.00	10.9
392	35	37.00	382.00	96.9
393	34	35.94	424.00	84.8
394	15	15.86	937.00	16.9

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-287 Numbers and percentages of invertebrates within each feeding type taken in beating samples at each site during September 1975 for RBOSP

Feeding type	Site 1		Site 2P		Site 2J		Site 3P		Site 3J	
	#	%	#	%	#	%	#	%	#	%
Herbivores	142	82.1	70	76.1	9	56.3	5	18.5	3	9.7
Flower feeders	3	1.7	2	2.2	0	0.0	0	0.0	3	9.7
Fungus feeders	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Saprovores	0	0.0	1	1.1	0	0.0	0	0.0	16	51.6
Omnivores	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Predators	6	3.5	18	19.6	4	25.0	22	81.5	8	25.8
Unknown	22	12.7	1	1.1	3	18.8	0	0.0	1	3.2

Table 2.3-288 Results of trap d-vac invertebrate sampling from shadscale (Atriplex confertifolia), at site 2, pinyon-juniper (south slope), during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	plant diameter(M)	plant volume(M3)	# of invertebrates per cubic meter
36	5	5.00	0.25	0.008181	611.2
37	9	9.00	0.36	0.024429	368.4
38	8	8.00	0.61	0.118847	67.3
39	6	6.00	0.51	0.069456	86.4
40	13	13.00	0.46	0.050965	255.1

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-289 Results of trap d-vac invertebrate sampling from shadscale (Atriplex confertifolia) at site 2, pinyon-juniper (south slope), during July 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted #	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
228	20	20.00	0.51	0.068642	291.4
229	19	19.00	0.25	0.008580	2214.4
230	8	8.00	0.33	0.018817	425.2
231	7	7.00	0.36	0.023624	296.3
232	6	6.00	0.33	0.018817	318.9

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-290 Results of trap d-vac invertebrate sampling from shadscale (Atriplex confertifolia) at site 2, pinyon-juniper (south slope), during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
407	6	14.36	0.41	0.035041	409.7
408	7	16.75	0.20	0.004380	3824.1
409	4	9.57	0.41	0.035041	273.1
410	7	16.75	0.18	0.002953	5672.3
411	0	0.00	0.25	0.008580	0.0

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-291 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 3, pinyon-juniper (north slope), during June, 1975 for RBOSP

taxon	# collected	relative abundance**	density (#/M2)
COLLEMBOLA	240	62.02	***
COLEOPTERA	59	15.25	***
LEPIDOPTERA	1	0.26	0.01
HYMENOPTERA	39	10.08	***
CHELONETHIDA	1	0.26	0.01
SOLPUGIDA	1	0.26	0.01
ARANEIDA	16	4.13	0.57
ACARI	30	7.75	***

* catch-effort regression method (Gist and Crossley, Jr.,1973)
** (# collected each taxon, site 3/# collected all taxa, site 3) X 100
*** assumptions of density estimation method not met

Table 2.3-292 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 3, pinyon-juniper (north slope), during July 1975 for RBOSP

Taxon	# collected	Relative abundance**	Density (#/M2)
COLLEMBOLA	400	33.28	***
ORTHOPTERA	4	0.33	0.06
PSOCOPTERA	1	0.08	0.01
COLEOPTERA	71	5.91	***
LEPIDOPTERA	2	0.17	0.02
HYMENOPTERA	91	7.57	***
ARANEIDA	32	2.66	***
PHALANGIDA	1	0.08	0.01
ACARI	600	49.92	5.14

* catch-effort regression method (Gist and Crossley, Jr.,1973)
** (# collected each taxon, site 3/# collected all taxa, site 3) X 100
*** assumptions of density estimation method not met

Table 2.3-293 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 3, pinyon-juniper (north slope), during September 1975 for RDOSP

Taxon	# collected	Relative abundance**	Density (#/M2)
COLLEMBOLA	12	2.82	***
ORTHOPTERA	1	0.24	0.01
COLEOPTERA	33	7.76	0.73
LEPIDOPTERA	1	0.24	0.01
HYMENOPTERA	17	4.00	0.46
ARANEIDA	19	4.47	0.59
PHALANGIDA	1	0.24	0.01
ACARI	340	80.00	12.83
GEOPHILOMORPHA	1	0.24	0.01

* catch-effort regression method (Gist and Crossley, Jr.,1973)
** (# collected each taxon, site 3/# collected all taxa, site 3) X 100
*** assumptions of density estimation method not met

Table 2.3-294 Results of litter d-vac invertebrate sampling at site 3, pinyon-juniper (north slope), during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	litter dry weight (gm)	# of invertebrates per kilogram litter
122	10	10.00	688.00	14.5
123	0	0.00	554.00	0.0
124	0	0.00	421.00	0.0
125	1	1.00	326.00	3.1
126	2	2.00	274.00	7.3

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-295 Results of litter d-vac invertebrate sampling at site 3, pinyon-juniper (north slope), during July 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Litter dry Weight (gm)	# of invertebrates per kilogram litter
258	72	72.00	890.00	80.9
259	66	66.00	900.00	73.3
260	19	19.00	930.00	20.4
261	45	45.00	910.00	49.5
262	36	36.00	436.00	82.6

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-296 Results of litter d-vac invertebrate sampling at site 3, pinyon-juniper (north slope), during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Litter dry Weight (gm)	# of invertebrates per kilogram litter
336	92	95.00	987.00	96.3
337	4	4.13	1069.00	3.9
338	8	8.26	1041.00	7.9
339	3	3.10	730.00	4.2
340	87	89.84	808.00	111.2

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-297 Results of trap d-vac invertebrate sampling from sagebrush (Artemisia tridentata), at site 3, pinyon-juniper (north slope), during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	plant diameter(M)	plant volume(M3)	# of invertebrates per cubic meter
49	2	4.00	0.51	0.069456	57.6
50	8	16.00	0.15	0.001767	9054.1
51	2	4.00	0.23	0.006371	627.9
52	2	4.00	0.23	0.006371	627.9
53	5	10.00	0.28	0.011494	870.0

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-298 Results of trap d-vac invertebrate sampling from sagebrush (*Artemesia tridentata*) at site 3, pinyon-juniper (north slope), during July 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
248	7	7.00	0.51	0.068642	102.0
249	2	2.00	0.36	0.023624	84.7
250	1	1.00	0.36	0.023624	42.3
251	3	3.00	0.31	0.014856	201.9
252	3	3.00	0.38	0.028958	103.6

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-299 Results of trap d-vac invertebrate sampling from sagebrush (Artemesia tridentata) at site 3, pinyon-juniper (north slope), during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
318	1	69.00	0.25	0.008580	8041.7
319	2	138.00	0.41	0.035041	3938.2
320	3	207.00	0.43	0.042213	4903.7
321	11	759.00	0.58	0.104289	7277.9
322	11	759.00	0.33	0.018817	40336.8

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-300 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 4, sagebrush, during June, 1975 for RBOSP

taxon	# collected	relative abundance**	density (#/M2)
COLLEMBOLA	4856	91.40	80.27
ORTHOPTERA	2	0.04	***
COLEOPTERA	23	0.43	0.31
LEPIDOPTERA	13	0.24	***
HYMENOPTERA	248	4.67	***
ARANEIDA	50	0.94	0.90
ACARI	121	2.28	***

* catch-effort regression method (Gist and Crossley, Jr.,1973)
** (# collected each taxon, site 4/# collected all taxa, site 4) X 100
*** assumptions of density estimation method not met

Table 2.3-301 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 4, sagebrush, during July 1975 for RBOSP

Taxon	# collected	Relative abundance**	Density (#/M2)
THYSANURA	2	0.06	0.03
COLLEMBOLA	2658	77.52	27.38
ORTHOPTERA	18	0.52	0.58
COLEOPTERA	23	0.67	0.27
LEPIDOPTERA	6	0.17	0.05
HYMENOPTERA	504	14.70	16.82
SOLPUGIDA	3	0.09	0.04
ARANEIDA	47	1.37	0.72
ACARI	167	4.87	2.34
GEOPHILOMORPHA	1	0.03	0.01

* catch-effort regression method (Gist and Crossley, Jr.,1973)
** (# collected each taxon, site 4/# collected all taxa, site 4) X 100

Table 2.3-302 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 4, sagebrush, during September 1975 for RBOSP

Taxon	# collected	Relative abundance**	Density (#/M2)
COLLEMBOLA	1	0.24	0.01
ORTHOPTERA	34	8.06	***
COLEOPTERA	13	3.08	0.21
LEPIDOPTERA	5	1.18	0.07
HYMENOPTERA	119	28.20	5.06
SOLPUGIDA	3	0.71	***
ARANEIDA	43	10.19	2.44
ACARI	203	48.10	10.78
GEOPHILOMORPHA	1	0.24	0.01

* catch-effort regression method (Gist and Crossley, Jr., 1973)
** (# collected each taxon, site 4/# collected all taxa, site 4) X 100
*** assumptions of density estimation method not met

Table 2.3-303 Results of litter d-vac invertebrate sampling at site 4, sagebrush, during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	litter dry weight (gm)	# of invertebrates per kilogram litter
87	45	45.00	131.00	343.5
88	11	11.00	215.00	51.2
89	128	128.00	173.00	739.9
90	177	177.00	124.00	1427.4
157	11	11.00	314.00	35.0

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-304 Results of litter d-vac invertebrate sampling at site 4, sagebrush, during July 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Litter dry Weight (gm)	# of invertebrates per kilogram litter
208	1	1.00	216.00	4.6
209	2	2.00	134.00	14.9
210	4	4.00	336.00	11.9
211	8	8.00	346.00	23.1
212	0	0.00	277.00	0.0

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-305 Results of litter d-vac invertebrate sampling at site 4, sagebrush, during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Litter dry Weight (gm)	# of invertebrates per kilogram litter
375	27	35.00	139.00	251.8
376	1	1.30	162.00	8.0
377	12	15.56	225.00	69.1
378	12	15.56	215.00	72.4
379	7	9.07	170.00	53.4

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-306 Results of trap d-vac invertebrate sampling from sagebrush (Artemisia tridentata), at site 4, sagebrush, during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	plant diameter(M)	plant volume(M3)	# of invertebrates per cubic meter
11	13	17.00	0.46	0.050965	333.6
12	7	9.15	0.43	0.041630	219.9
13	8	10.46	0.43	0.041630	251.3
14	5	6.54	0.53	0.077952	83.9
15	8	10.46	0.38	0.028731	364.1

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-307 Results of trap d-vac invertebrate sampling from sagebrush (Artemesia tridentata) at site 4, sagebrush, during July 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
163	8	8.00	0.46	0.049974	160.1
164	1	1.00	0.36	0.023624	42.3
165	7	7.00	0.64	0.134066	52.2
166	7	7.00	0.23	0.006288	1113.3
167	3	3.00	0.36	0.023624	127.0

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-308 Results of trap d-vac invertebrate sampling from sagebrush (Artemesia tridentata) at site 4, sagebrush, during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
370	6	174.00	0.51	0.068642	2534.9
371	1	29.00	0.31	0.014856	1952.1
372	2	58.00	0.71	0.188195	308.2
373	4	116.00	0.20	0.004380	26483.2
374	1	29.00	0.25	0.008580	3379.9

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-309 Relative abundance and population density estimates * for ground dwelling invertebrates collected by pitfall traps at site 5, mixed brush, during June, 1975 for RBOSP

taxon	# collected	relative abundance **	density (#/M2)
THYSANURA	28	10.85	0.42
COLLEMBOLA	32	12.40	0.40
ORTHOPTERA	5	1.94	0.04
COLEOPTERA	29	11.24	***
LEPIDOPTERA	8	3.10	0.19
HYMENOPTERA	77	29.84	1.33
ARANEIDA	45	17.44	0.96
PHALANGIDA	13	5.04	0.65
ACARI	21	8.14	***

* catch-effort regression method (Gist and Crossley, Jr.,1973)
** (# collected each taxon, site 5/# collected all taxa, site 5) X 100
*** assumptions of density estimation method not met

Table 2.3-310 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 5, mixed brush, during July 1975 for RBOSP

Taxon	# collected	Relative abundance**	Density (#/112)
THYSANURA	185	26.24	2.33
COLLEMBOLA	28	3.97	***
ORTHOPTERA	13	1.84	***
PSOCOPTERA	1	0.14	0.01
COLEOPTERA	86	12.20	1.19
LEPIDOPTERA	6	0.85	0.09
HYMENOPTERA	230	32.62	***
CHILOPETHIDA	1	0.14	0.01
ARANEIDA	47	6.67	***
PHALANGIDA	7	0.99	***
ACARI	101	14.33	***

* catch-effort regression method (Gist and Crossley, Jr.,1973)
** (# collected each taxon, site 5/# collected all taxa, site 5) X 100
*** assumptions of density estimation method not met

Table 2.3-311 Relative abundance and population density estimates* for ground dwelling invertebrates collected by pitfall traps at site 5, mixed brush, during September 1975 for RBOSP

Taxon	# collected	Relative abundance**	Density (#/M2)
THYSANURA	25	11.11	0.54
COLLEMBOLA	13	5.78	0.29
ORTHOPTERA	9	4.00	0.11
COLEOPTERA	18	8.00	0.32
LEPIDOPTERA	1	0.44	0.01
HYMENOPTERA	34	15.11	0.89
CHELONETHIDA	2	0.89	0.05
ARANEIDA	57	25.33	2.40
PHALANGIDA	1	0.44	0.01
ACARI	65	28.89	***

* catch-effort regression method (Gist and Crossley, Jr.,1973)
** (# collected each taxon, site 5/# collected all taxa, site 5) X 100
*** assumptions of density estimation method not met

Table 2.3-312 Results of litter d-vac invertebrate sampling at site 5, mixed brush, during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	litter dry weight (gm)	# of invertebrates per kilogram litter
76	42	42.00	342.00	122.8
77	11	11.00	423.00	26.0
80	9	9.00	254.00	35.4
155	77	77.00	292.00	263.7
156	60	60.00	322.00	186.3

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-313 Results of litter d-vac invertebrate sampling at site 5, mixed brush, during July 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Litter dry Weight (gm)	# of invertebrates per kilogram litter
178	27	27.00	456.00	59.2
179	27	27.00	525.00	51.4
180	124	124.00	543.00	228.4
181	111	111.00	941.00	118.0
182	76	76.00	1255.00	60.6

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-314 Results of litter d-vac invertebrate sampling at site 5, mixed brush, during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Litter dry Weight (gm)	# of invertebrates per kilogram litter
365	51	51.00	103.00	495.1
366	332	332.00	197.00	1685.3
367	61	61.00	192.00	317.7
368	156	156.00	182.00	857.1
369	30	30.00	356.00	84.3

* # of invertebrates in sample X Berlese calibration factor

Table 2.3-315 Results of trap d-vac invertebrate sampling from serviceberry (Amelanchier utahensis), at site 5A, mixed brush, during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	plant diameter(M)	plant volume(M3)	# of invertebrates per cubic meter
54	4	4.00	0.43	0.041630	96.1
55	4	4.00	0.51	0.069456	57.6
56	6	6.00	0.58	0.102160	58.7
57	5	5.00	0.20	0.004189	1193.7
58	4	4.00	0.15	0.001767	2263.5

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-316 Results of trap d-vac invertebrate sampling from serviceberry (Amelanchier utahensis) at site 5A, mixed brush, during July 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
173	4	4.00	0.33	0.018817	212.6
174	0	0.00	0.41	0.035041	0.0
175	2	2.00	0.69	0.169033	11.8
176	2	2.00	0.23	0.006125	326.6
177	5	5.00	0.43	0.042213	118.4

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-317 Results of trap d-vac invertebrate sampling from serviceberry (Amelanchier utahensis) at site 5A, mixed brush, during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
308	6	12.00	0.23	0.006288	1908.4
309	2	4.00	0.28	0.011371	351.8
310	16	32.00	0.61	0.118847	269.3
311	20	40.00	0.31	0.014856	2692.5
312	26	52.00	0.23	0.006288	8269.9

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-318 Results of trap d-vac invertebrate sampling from snowberry (Symphoricarpos oreophilus), at site 5B, mixed brush, during June, 1975 for RBOSP

sample #	# of invertebrates in sample	adjusted # *	plant diameter(M)	plant volume(M3)	# of invertebrates per cubic meter
66	11	11.00	0.51	0.069456	158.4
67	2	2.00	0.15	0.001767	1131.8
68	9	9.00	0.23	0.006371	1412.7
69	5	5.00	0.23	0.006371	784.9
70	2	2.00	0.28	0.011494	174.0

* # of invertebrates in sample X d-vac and Berlese calibration factors

Table 2.3-319 Results of trap d-vac invertebrate sampling from snowberry (Symphoricarpos oreophilus) at site 5S, mixed brush, during July 1979 for RSOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
168	5	5.00	0.20	0.004380	1141.5
169	3	3.00	0.41	0.035011	85.6
170	4	4.00	0.31	0.011856	269.3
171	1	1.00	0.20	0.004380	228.3
172	0	0.00	0.31	0.011856	0.0

* # of invertebrates in sample X d-vac and release calibration factors

Table 2.3-320 Results of trap d-vac invertebrate sampling from snowberry (Symphoricarpos oreophilus) at site 5B, mixed brush, during September 1975 for RBOSP

Sample #	# of invertebrates in sample	Adjusted # *	Plant Diameter(M)	Plant Volume(M3)	# of invertebrates per cubic meter
313	6	9.00	0.20	0.004380	2054.7
314	22	33.00	0.23	0.006288	5248.2
315	21	31.50	0.33	0.018817	1674.1
316	33	49.50	0.41	0.035041	1412.6
317	8	12.00	0.48	0.058998	203.4

* # of invertebrates in sample X d-vac and Berlese calibration factors

2.3-9.5 Raw Data
for Invertebrates

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Greasewood Sale 1 DM 11/24/75

LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 Rio Blanco Site Name & Number SITE

Collection Date July 4 - 7 Species List Ref. No. 83 A. PF

Sampling Means PITFALL GRID Sorting Means HAND

DR 10/1/75 Boschen

Species Reference Number		Sample Number #162	#187	#202	#225	#237	#243	#257	#268	#282	#288	Total
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
	13											
P	14	13	11	6	14	10						
	15											
	16											
O 07	17	10	3	9	9	10	2	19	13	37	18	
	18											
	19											
	20											
	21											
	22											
33	23			1		1	2	3		1	1	
	24											
33	25	2		1	1	2				4		
	26											
	27											
	28											
P 19	29									1		
	30											
	31											
P 19	32		1									
	33											
	34											
	35											
	36											
	37											
	38											
	39											
	40											

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Project 83 Rio Blanco site A Sp.list ref. no. 83APF Date JULY

	BEER FAM		162	187	202	225	237	243	257	268	277	282
O	27	41	1								1	5
		2										
		3										
		4										
H	33	5									1	
		6										
		7										
	19	48		1	1		1					
		9										
		50										
		1										
		2										
		3										
S	19	4			1							
		5										
		6										
		7										
		8										
P	19	59		1						1	1	
		60										
		1										
	19	62	4						2		1	
	33	3	1		2	1				1	5	
	33	4	1							1		3
	33	5				2						
	33	6				1						
	33	7						4	13	5	11	5
		8										
		9										
U	35	70	79	20	20	21	13	3	20	21	134	121
S	02	71	15	7	5	6	1		12	1	14	16
H	07	72	2	2				1		1	3	1
	25	73	1		1	1		2	4	2	3	5
U	18	74	5	2	2	7	2	3	4	14	36	16
H	34	75	15	11	12	15	11	1		5	11	9
	16	76	1									
	17	77	6	1		2	2	2	2	2	9	6
	19	78	1									
P	27	79	4	1	3	2	6		8	2	4	16
	12	80	1	5		1			1	14	99	59
P	4	81		1				1				1
O	21	82		1	1							4
N	14	83				1			10	9	48	62
S	04	84					1					
	27	85					1					
C	19	86					1					
S	19	87					1					
	19	88						1				
	14	89						1				
P	19	90							2		1	

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Project 83 Rio Blanco Site A Sp.list ref. no. 83APF Date July

	ORDER	FAMILY		162	187	202	225	237	243	257	268	277	282
P-	19	026	91							2			
P-	19	026	92							1			
M-	14	071	93				1			1		2	3
H-	24		94								2	1	
P-	19	026	95									2	1
C-	19		96										1
P-	48		97										1
			98										
			99										
			00										
			01										
			02										
			03										
			04										
			05										
			06										
			07										
			08										
			09										
			00										
			01										
			02										
			03										
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			05										
			06										
			07										
			08										
			09										
			00										
			01										
			02										
			03										
			04										
			05										
			06										
			07										
			08										
			09										
			00										

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SITE B

Collection Date JULY S.P.V Species List Ref. No. 83 B PF

Sampling Means PITFALL Sorting Means HAND

Boschen Oct 75

Species Reference Number				Sample Number											Total
				#161	#186	#201	#224	#236	#241	#255	#270	#295	280		
			1												
			2												
			3												
			4												
1	019		5				2								
			6												
			7												
			8												
			9												
			10												
19	099		11	3											
19	047		12	2				3			3	1			
27			13				2	7	5	10	2	1	3		
27			14	9	3	2		2	2	1	1		3		
			15												
			16												
			17												
			18												
			19												
33			20		1	1	1					2			
			21												
			22												
			23												
			24												
			25												
			26												
			27												
			28												
19	0		29					3							
			30												
			31												
			32												
27			33	9	2		3		1	3		1			
			34												
			35												
			36												
			37												
			38												
			39												
			40												

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Project 83 Site B Sp.list ref. no. 83BPF Date

ORD	FAM		161	186	201	224	236	241	255	270	275	280
		1										
		2										
		3										
		4										
		5										
f	33	6	1									
		7										
		8										
l	19	9						1				
		50										
		1										
		2										
O	27	53		1		2		2	3	1	1	1
P	33	4					1	2	1	1		3
		5										
		6										
P	33	7		1								
U *	25	8			1							
		9										
		60										
		1										
		2										
		3										
		4										
		5										
		6										
	33 U	7				1						
	33	8	1			1				1		
	30	9			1							
	35	70			1			1				
	33	1					1					
	33	2									1	1
	35	73	362	44	41	30	40	31	8	20	39	64
	07	14	1	1			1		1		1	1
	19 10	75	1									
	27	76	2		1	1	2			1	1	2
	27	77	2									
	18	78	1	2	1	4	6	5	10	8		1
	19 000	79		1		1			1			
	27	80			2	1		1	3	3		1
	11	81			2					3	1	1
	04	82			1		1	3	12	4		
	03	83			1	1	2		2	1	4	3
	11 099	84				1						
	19 0	85				1						
	24	86					1					
	27	87						1		1		1
	19 12	88							1			
		89									1	
		90										

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SITE C

Collection Date JULY '75 S.P.V Species List Ref. No. 83 C PF

Sampling Means PITFALL Sorting Means HAND DM 11/2/75

10/4/75 dh Boschen

Species Reference Number		Sample Number #160	#185	#200	#223	#235	#242	#256	#269	#226	281	Total
	1											
	2											
	3											
	4											
27	5						1	1	1		1	
	6											
	7											
	8											
19	9	2					3		9	29	5	
	10					1						
	11											
19	12									3		
27	13		3	6			2	4		4	3	1
	14											
	15											
	16											
	17											
	18											
	19											
27	20	1	2				1	10	3	5	1	
	21											
	22											
	23											
	24											
	25											
27	26				4	13	3	2	1		4	
	27											
19 123	28				1	1						
	29											
	30											
	31											
04	32						1					
	33											
	34											
14	35			1								
35	36	2		2								
33	37				1		2			1		
33	38			1				1				2
33	39		1			1	1			2		
	40											

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Page 2 of ___

project_____ Site_____ Sp.list ref. no._____ Date_____

			160	185	200	223	235	242	256	269	276	281	Total
P. POHLII	23	049	41						1				
	33	041	2	1			1		1	5	2	4	
	33	060	3	2	2	1							
	33	077	4			2							
	33	059	5				1						
	35		46	251	26	16	18	18	40	10	6	114	47
	21		47	1				2			1	1	
	04		48		1		2	4	10	224	122	36	
	03		49		1	1				1			1
	29		50		1			1					
	24		51		1		1						
	19	043	52		1								
	19	042	53		1		1						
	12		54			1							
	19	020	55			1					1		
	27		56			1		1			2		
	19	123	57				2					2	
	19	123	58				1						
	16		59				3						
	18		60				1				1	1	
	29		61					1					
	17		62					1	1				
	19	026	63						1				
	25		64						4	4	2	3	
	24		65								1		
	27		66								1		
	14	103	67								2	1	
	22		68									1	
	19	026	69									1	
	19	020	70	1									
			1										
			2										
			3										
			4										
			5										
			6										
			7										
			8										
			9										
			80										
			1										
			2										
			3										
			4										
			5										
			6										
			7										
			8										
			9										
			90										

RDOSP PROGRESS REPORT

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83-01 Site Name & Number Site D 4 SAGE, 4/12 DM

Collection Date Fall July S.P.2 Species List Ref. No. 83D PF

Sampling Means Pitfall Sorting Means hand

IDer Boschen Oct Sept 78

Species Reference Number ORD	FAMILY		Sample Number 158	183	198	226	233	239	253	272	273	278	Total
		1											
		2											
		3											
		4											
		5											
14		6						1					
		7											
27		8	10	8	3	4	1	5	3	6	17	6	
27		9	6	9	1	2	6	2	8	2	2	8	
27		10	8	4	4	2	9	5	59	3	10	28	
27		11						1					
27		12	63			36	5	3	8	3	3	18	
		13											
		14											
19		15	1	1	2			1					
		16											
		17											
		18											
		19											
		20											
27		21	3	2	2	1	1	4	1	1	1	1	
		22											
27		23	6			5	7	10		1	4		
		24											
19		25	1										
19		26						1					
		27											
14		28			1		1	1					
		29											
		30											
		31											
		32											
27		33						1					
		34											
		35											
		36											
		37											
		38											
		39											
		40											

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Project 83 Site D Sp.list ref. no. ___ Date July

ORD	FAM		158	183	196	226	233	239	253	272	273	278
		41							1			
		42										
		3										
		4										
		5										
		6										
		7										
		8										
I	33	9			1							
		50										
I	33	1		1	1			1		3	1	1
I	33	2	3	1						2	2	1
I	33	3	5	4	2	2		2			4	1
		4										
		5										
P	33	6	1						2			
P	30	7		1			1			1		
P	33	8		1		2						
P	33	9			1							
P	33	60							1			
P	33	1								1		
-	04	62	98			1	2	4	2532	19		2
-	35	63	44	16	5	4	11	30	12	15	7	23
H	07	64	1	3		4	1	2	3	2	1	1
-	24	65	4						1		1	
-	27	W 66	2	2	1		1					1
-	19	10 67	1									
*	17	68	1		1		1	1		3		2
*	18	69	2	3	2	2	6	3	7	10	5	2
*	16	70	1									
U	19	10 71	1									
-	27	72		4	3	3	1	2	9	3	13	3
-	19	73		1								
H	19	123 74		1	2			1				1
*	2	75		3	1	2		3	10	4	2	
-	14	76			1							
-	00	77				1	1					
P	14	78						1				
O	20	79						1				1
-	14	80							1			
-	19	81								1		
P	50	82								1		
		3										
		4										
		5										
		6										
		7										
		8										
		9										
		0										

RBCSP PROJECT REPORT

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LAB ANALYSIS - INVERTEBRATES

Mixed Brush

Project Name & Number 83 RIO BLANCO Site Name & Number SITE 5 1/2 M

Collection Date JULY 4.P.2 Species List Ref. No. 835 PF

Sampling Means PITFALL Sorting Means HAND

Boschen

Species Reference Number			Sample Number											Total
			#159	#184	#199	#227	#234	#240	#254	#271	#274	#229		
PKD	From.	1	5	7	2	2	3		12	9	4	5		
		2												
27		3		2	2	2		6	1	6				
		4												
27		5		2					2	1				
27		6		2										
		7												
		8												
		9												
		10												
		11												
		12												
		13												
		14												
		15												
		16												
27		17	5	1	1			4	4	4	4	3		
27		18	28	8	11	3	4	13	8	5	14	24		
19		19			1		1	2	1					
19	099	20	10	3	4	3	5	3	1	7	2	1		
		21												
		22												
		23												
		24												
		25												
		26												
		27												
		28												
19	102	29	1				1			1				
		30												
		31												
		32												
		33												
19	102	34		1										
27		35							2			2		
		36												
		37												
		38												
		39												
		40												

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RBOSP PROGRESS REPORT

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Project _____ Site _____ Sp.list ref. no. _____ Date _____

			159	184	199	227	234	240	254	271	274	279
ORD FAM		41							1			
		2										
		3										
		4										
		5										
		6										
		7										
		8										
		9										
P	334	50								2		3
		1										
		2										
P	33	3	1		1	23	3			3	2	
P	331	4	2	2		1			2	1	2	2
P	33	5		1	2				1			
		6										
		7										
P	33	8	2				1	3		1	1	
	24	9								1		
		60										
		1										
		2										
		3										
P	33	4	1									
P	33	5	1				2					
P	33	6								1		
-	02	67	42	20	22	15	21	17	6	10	19	13
H-	24	68	1		1		2		1			
H-	07	69	1		2	1			1	2	1	5
U*	17	70	3	1		1	1		1			
L-	35	71	15	3	6	6	9	14	3	21	13	11
	04	72	2				6	4	4		4	8
S-	19 .47	03	6	2	3	1	3		2	2	1	1
U*	25	74		2	2		3	5	2	3	2	1
S-	19 102	75		1		1			1	1		
P-	14 005	76			1						1	1
H-	34	77			2		1			1	1	2
S-	12	78			1							
L-	19 .001	79				1		1		2		
P-	14 .035	80				1						
H*	18	81					1	1	2	6		
P-	29	82					1					
O-	27	83							1		3	
C-	27	84								1		
F*	16	85									1	
		6										
		7										
		8										
		9										
		0										

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LAB ANALYSIS - INVERTEBRATES

Greasewood/sage DM 11/12/7

Project Name & Number 83 RIO BLANCO Site Name & Number SITE 1

Collection Date SEPTEMBER-7 Species List Ref. No. 83 A PF

Sampling Means PITFALL Sorting Means HAND

Boschen

Species Reference Number	Sample Number 1298	2324	3341	4361	5363	6391	7420	8432	9438	448 10	Total
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17	20	33	1	4	9	6	5	4	18	4	
18											
19											
20											
21											
22			1								
23											
24											
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RBOSP PROCESSED

ecology consultants, inc.

Project _____ Site _____ Sp.list ref. no. _____ Date _____

ORD	FAM		298	324	341	360	383	397	420	432	438	448
27		41			1				4		1	
		2										
		3										
		4										
		5										
		6										
		7										
S 19	044	48									1	
		9										
		50										
		1										
		2										
		3										
		4										
		5										
		6										
		7										
		8										
P 14		59			1			1				
		60										
		1										
		2										
		3										
		4										
		5										
		6										
		7										
		8										
		9										
35		70	6	68	78	69	47	62	20	9	14	2
12		71	2	4	2		5	6	1	2	11	3
07		72			1		2		1		3	1
		73			2	1	1		1	1	4	
18		74	4	6	4	4	2		6	6	7	5
34		75	17	8	2	1		2	1	1		
* 16		76	1	2	1							
* 17		77	1	2			1	1	2	2	6	
P 17		78			2	2		3	2			
11		79		1			4					
12		80					2		6	12	14	1
11		81		1	1	1		2		1		
2		82		1			3		2		5	4
		3										
04		84	1	12	14	17	5	3	6	5		
		5										
		6										
S 19	044	87					2					
		8										
		9										
		90										

RECEIVED PROCESS REPORT

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ecology consultants, inc.

Project _____ Site _____ Sp.list ref. no. _____ Date _____

		298	324	341	360	383	397	420	432	438	448
	1										
	2										
19	3		1		1	2		2			
24	4		1		1	1					
	5										
	6										
48	7										
19	8	1							1		
19	9		1		3						
27	0		2								
27	1		1	1							
27	2			1							
26	3				3	1	4	3			1
27	4					6					
19	5					1	1	1			
19	6					1			1		
19	7					2	1				
19	8								1		
33	9	1	4	6	6	3	8	1	3	7	1
	0										
	1										
	2										
	3										
	4										
	5										
	6										
	7										
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RROST PROGRESS REPORT

3541

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LAB ANALYSIS - INVERTEBRATES

2 p/j South

Project Name & Number 83 RIO BLANCO Site Name & Number SITE B

Collection Date SEPTEMBER 5.P.3 Species List Ref. No. 83 BPF

Sampling Means PITFALL GRID Sorting Means HAND

Boschan ~~Sept~~ Oct 75

PM 11/12/75

Species Reference Number			Sample Number											Total
ORD	FAM		#299	#325	#342	#361	#384	#398	#421	#433	#439	#449 20		
		1												
		2												
		3												
		4												
		5												
		6												
		7												
		8												
		9												
		10												
		11												
		12												
27		13	7	1	4	6	10				2			
27		14	1	1	4		1		2	1				
		15												
		16												
		17												
		18												
		19												
		20												
		21												
		22												
		23												
		24												
		25												
		26												
		27												
		28												
		29												
P 19	026	30							1					
		31												
P 19	026	32	1											
O 27		33	4	11	1		2	1	3	1	3	1		
		34												
		35												
		36										2		
		37												
		38												
		39												
		40												

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Page 2 of 3

Project RIO BLANCO Site B Sp.list ref. no. 83BPF Date SEPT.

		FAM	299	325	342	361	384	398	421	433	439	449		
	4													
	2													
	3													
	4													
	5													
	6													
	7													
	8													
	9													
	50													
	1													
	2													
027	53								2	1	1			
	4													
	5													
	6													
	7													
	8													
	9													
	60													
	1													
	2													
	3													
	4													
	5													
	6													
	7													
	8													
	9													
	70													
	1													
	2													
133	73	2		12	15	5	7	10		2	8			
09	74										1			
	5													
027	76	1		1	2		3	3	2	2	4			
	7													
18	78	3		1	1		1		4	2	1	1		
1	79						1							
25	80	1		2	5	9			1	1	3	1		
17	81			1	3	2	1	1			1			
04	82			1	2	3								
02	83						2		1	1	1			
	4													
	5													
	6													
	7													
	8													
	9													
11	90	1												

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Project Y3 RIO BLANCO Site B Sp.list ref. no. 83 BPF Date SEPT.

IND	FAM			299	325	342	361	384	398	421	433	439	449
19	123		91	1	1				1				
19	104	2	92		3	1							
20			93					1	1				
19	102		94						3				
33			95	5	1	0	1	3	0	0		1	
			6										
			7										
			8										
			9										
			10										
			1										
			2										
			3										
			4										
			5										
			6										
			7										
			8										
			9										
			0										
			1										
			2										
			3										
			4										
			5										
			6										
			7										
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			0										
			1										
			2										
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			4										
			5										
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			4										
			5										
			6										
			7										
			8										
			9										
			0										

REPORT

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P/d NORTH 3 DM

LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SITE C

Collection Date SEPTEMBER S.P.3 Species List Ref. No. 83 C PF

Sampling Means PITFALL Sorting Means HAND

Boschen

Species Reference Number		Sample Number										Total
		#300	#326	#343	4362	#385	#379	#422	#434	#440	#50 #0	
	1											
	2											
	3											
	4											
	5											
27	6	1			1		1					
	7											
	8											
	9			3				4		1		
	10											
	11											
	12			1						1		
	13			1					2			
	14											
	15											
	16											
	17											
	18											
	19											
	20				1							
	21											
	22											
	23											
	24											
	25											
27	26	1			1	1/2	1					
L9 042	27			4		2		2				
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38											
	39											
	40											

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Page ___ of ___

roject 83 KID BLANCO Site C Sp.list ref. no. 83 CPF Date SEPT

ORD	FAM		300	326	343	362	385	399	422	434	440	450
		41										
		2										
		3										
		4										
		5										
U	35	46	27	55	25	29	33	31	61	40	17	22
C	27	47			1		1	1	1	1	1	
	04	48				3			4	2	3	
H	07	49			1							
		50										
H	04	51		1								
		2										
		3										
		4										
U	19	55								1		
O*	27	56	1		2		2		1		1	
		7										
		8										
		9										
H*	18	60	1		1	2				1		1
		1										
H*	17	62							1			
		3										
*	25	64			12	2	2	2			1	
H	34	65			1							
		6										
		7										
		8										
P	19	69				3	1	1	1			
		70										
M	19	71	1									
S	19	72		1								
F	50	73	1									
S	19	74					4	2				
T	33	5	1	3	2		2	3	2	2	2	1
		6										
		7										
		8										
		9										
		80										
		1										
		2										
		3										
		4										
		5										
		6										
		7										
		8										
		9										
		90										

PROGRESS REPORT

35

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Sage 4 12/7

LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 Rio Blanco Site Name & Number SITE D 3rd

Collection Date SEPT Sp. 3 Species List Ref. No. 83DPF

Sampling Means PITFALL Sorting Means HAND ~~King~~ Boughton Oct 25

day 1 2 3 4 5 6 7 8 9 10

Species Reference Number		Sample Number #301	#328	#345	#363	#386	#400	#423	#435	#441	#451	Total
	1											
	2											
	3											
	4											
	5											
	6											
	7											
27	8	1	6	1	2	9	6	2	2	12	4	
27	9	10	3	4		3			1	1		
	10											
27	11			2			1					
27	12						2		2			
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20											
27	21					10			2		1	
	22											
27	23		1	4	2	3	1	1	5	5	2	
	24											
	25											
	26											
	27											
19	28							1	1			
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38											
	39		2	1	2	1				1		
	40											

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360

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Page 2 of 2

Project 83 Rio Puerco Site D Sp.list ref. no. 83 DPF Date SEPT

		301	328	345	363	386	400	423	435	441	451
	41										
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	50										
	1										
	2										
	3										
	4										
	5										
	6										
P 30	7					1				1	1
	8										
	9										
	60										
	1										
24	62		1								
	63	13	16	19	24	30	37	24	21	10	7
27	64	4	4	1	3	2	3	7	4	3	3
24	65		1	1	1		1	1			
	6										
	7										
17	68	1		1		1	2	3	1	1	
16	69		5	2		3	3	6	1	2	6
16	70		1								
	1										
27	72		1	4						1	
	3										
	4										
25	75		3	12		5	2	1	2	2	3
	6										
	7										
	8										
27	79			1		1					
	80										
	1										
23	82	1									
14	83	1									
19	84			1		1		1			
19	85			1							
19	86			1			1				
19	87			1							
19	88					1					
19	89					1		1			
33	90	3	1	2	6	9	6	11	1	2	2

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SITE 5 Mixed Brush R1/R2

Collection Date SEPTEMBER sp.3 Species List Ref. No. 835PF

Sampling Means PITFALL GRID Sorting Means HAND

Boschen

Species Reference Number		Sample Number #302	#327	#344	#364	#387	#401	#424	#436	#442	#452	Total
27	1	2	1	1			2	1	2	1		
	2											
27	3	4	2		1	1	2		2			
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
27	18				1	2	2	4	1	1	1	
19	19			1		1			1			
	20											
	21											
	22											
	23											
	24											
	25											
	26											
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38											
	39											
	40											

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Project 83 Rio Blanco Site 5 Sp.list ref. no. 835PF Date SEPT.

ORD	FAM	302	327	344	364	387	401	424	436	442	452
	41						1				
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	50										
	1										
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	60										
	1										
	2										
	3										
	4										
	5										
	6										
S	02	67	1	1		11	1	1	3	3	4	
H	24	68				1						
H	07	69	2	1		2	2			1	1	
		70										
U	35	71	1	2	4	10	5	6	6	21	9	1
	14	72						1		11		1
		73										
U*	25	74			1		1	3				
		75										
		76										
H	34	77							1			
		78										
U	19	79			1		3	2	1	1		
		80										
H*	18	81	2	3	1	3		1		2		4
P	29	82						1	1			
*	27	83	1				2			2		1
		84										
		85										
S	14 102	86					6					
P	19 005	87							1			
P	33	88	4	3	6	7	10	8	9	5	5	
		89										
		90										

RBOSP PROGRESS REPORT

363

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DM 11/13/75

LAB ANALYSIS - INVERTEBRATES

Greasewood-sage

Project Name & Number 93 RIO BLANCO Site Name & Number SITE A(1)

Collection Date JULY, 1975 sample period 2 Species List Ref. No. 83 A LD

Sampling Means LITTER DVAC Sorting Means BERLESE

IDer Boschen Sept 75

Litter wt 342 272 236 290 426

Species Reference Number			Sample Number										Total
			X218	X219	X220	X221	X222	6	7	8	9	10	
		1											
U 19	086	2	1										
		3											
		4											
		5											
18		6		1									
		7											
		8											
17	000	9	1	3			2						
		10											
		11											
		12											
O 27	061	13	1										
		14											
		15											
F 33	000	16	1			1							
		17											
24		18		1			1						
F 33	020	19	1										
P 19		20	2	3	1								
27		21	1			3	5						
35		22	5	5		6	12						
25		23	2	6		6							
12		24	1	2		1	1						
M 19	051	25		2									
S 19		26			1								
H 19	122	27				1							
		28											
		29											
		30											
		31											
		32											
		33											
		34											
		35											
		36											
		37											
		38											
		39											
P 19	084	40				1							
U 19	000	41				4							

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36

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P/N South II DM 11/17/?

LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 Rio Blanco Site Name & Number SITE B(2)

Collection Date JULY S.P. 2 Species List Ref. No. 83 B LD

Sampling Means LITTER DVAC Sorting Means BERLESE

litter wt 780 960 1110 1100 492 Boschen sep

	Species Reference Number		Sample Number 1	2	3	4	5	6	7	8	9	10	Total
	ORD FAM		2263	2264	2265	2266	2267						
O	27 061	1	1	1									
		2											
		3											
S	04 004	4	21	15	4		1						
S	09 000	5	5	1	2	2	2						
S	12 008	6	6	1									
LL	35 000	7	4	16	5	2	18						
P	19 006	8		10									
H	16 000	9		3									
H	16 10	10		2									
H	16	11				1							
L	25 000I	12					1						
F	24 000	13					1						
		14											
		15											
U	19 000UI	16	1	3			1						
		17											
		18											
P	25 031I	19					1						
		20											
		21											
		22											
		23											
		24											
		25											
		26											
		27											
		28											
		29											
		30											
		31											
		32											
		33											
		34											
		35											
		36											
		37											
		38											
		39											
		40											

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PROGRESS REPORT

365

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LAB ANALYSIS - INVERTEBRATES

P/J NORTH

Project Name & Number 83 RIO BLANCO Site Name & Number SITE C (C)

Collection Date JULY S.P. 2 Species List Ref. No. 83 C LO

Sampling Means LITTER DVAC Sorting Means BERLESE DM 11/13/79

Der Boschen Sept 78

Litter wt 890 900 930 910 436

	Species Reference Number			Sample Number 1258	1259	1260	1261	1262	6	7	8	9	10	Total
	CRD	FAM	1		32	9	1							
	27	061	2	2	9	2	43	3						
	18	000	3					1						
			4											
			5											
	19	123	6					1						
P	19	005I	7	2	1	2								
P	33	000	8	4	2									
			9											
			10											
	19		11	2										
	27	061	12	2										
	12		13	1	2			1						
	50	000	14	1										
	24	000	15	1										
	04	004	16	9	5									
	04	003	17	46	7									
	35	000	18		7	3		19						
P	29	000	19			1		1						
	25	000	20				1	1						
	19	123	21					3						
	19	C-2	22					1						
	19	C99	23					1						
			24											
			25											
			26											
P	25	031I	27			2		1						
P	33	065	28					1						
P	33	077	29		1									
P	25	031I	30					2						
			31											
			32											
			33											
			34											
			35											
			36											
			37											
			38											
			39											
			40											

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PROJECT PROGRESS REPORT

366.

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Sagebrush DM 11/13/75

LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SITE D (4)

Collection Date JULY S.P.V Species List Ref. No. 83 D L D

Sampling Means LITTER DVAC Sorting Means BERLESE

Litter wt 216 134 336 346 277

Ider Boschen Sept 75

Species Reference Number			Sample Number										
ORD	FAMILY		#208	#209	#210	#211	#212	6	7	8	9	10	Total
		1											
		2											
		3											
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
S	19 c19	14		1	1	1							
		15											
		16											
		17											
		18											
		19											
		20											
U	35 000	21			1	2							
		22											
		23											
		24											
		25											
		26											
		27											
		28											
		29											
F	25 c14	30	1		1	2							
H	16 c00	31		1									
F	24 c I	32			1								
		33											
		34											
		35											
		36											
U	19 c00UI	37				3							
		38											
		39											
		40											

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LAB ANALYSIS - INVERTEBRATES

Mixed brush DW 1/13/

Project Name & Number 83 RIO BLANCO Site Name & Number SITE 5

Collection Date JULY, 75 S.R.V Species List Ref. No. 83 5 LD

Sampling Means LITTER DVAC Sorting Means BERLESE

Ider Boshen Sept 75

litterwt 456 525 543 941 1255

	Species Reference Number ORD	Fam.		Sample Number #178	#179	#180	A181	#182	6	7	8	9	10	Total
P	50	000	1				1				-			
P	29	000	2	4	3	4	5	1						
U	17	0001	3	2		5	2	5						
O	27	061	4		4	2								
			5											
			6											
			7											
O	27	061	8		5			3						
			9											
H	18	Inc 3	10					3						
			11											
O	27	061	12	1										
			13											
			14											
			15											
			16											
U	25	001	17				3							
S	04	004	18	2	4	17	15							
P	19	026	19				2							
			20											
			21											
			22											
U	19	001	23	5	3	4	3	9						
U	35	000	24	10	6	82	64	48						
P	33	005	25		1	3	3	1						
			26											
			27											
	19	12	28	1										
S	12	002	29			5	5							
	24	001	30			1		1						
I	19	084	31			1								
S	19	017	32				1							
O	27	061	33					3						
			34											
			35											
			36											
			37											
			38											
			39											
			40											

OK, BEK

[illegible] PROGRESS REPORT

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Page 2 of ~

project 83 Site 5 Sp.list ref. no. 835 LD Date July 75

		178	179	180	181	182
P	23077	1				
P	23000 U	2	1	1		
P	23079	3			1	
P	23060	4			1	
P	23031 I.	5				2
		6				
		7				
		8				
		9				
		0				
		1				
		2				
		3				
		4				
		5				
		6				
		7				
		8				
		9				
		0				
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		7				
		8				
		9				
		0				
		1				
		2				
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		4				
		5				
		6				
		7				
		8				
		9				
		0				

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LAB ANALYSIS - INVERTEBRATES

Greasewood / sage DM 11/13/75

Project Name & Number 83 RIO BLANCO Site Name & Number SITE A(1)

Collection Date SEPTEMBER 9.8.7 Species List Ref. No. 83 A L D

Sampling Means LITTER TVAC Sorting Means BERLESE

IDer Bockhen Sept 75

litter wt 230 342 536 269 199

Species Reference Number			Sample Number (Subsample → from 332) 1	2	3	4	5	6	7	8	9	10	Total
U	27 000	1	1	1			1						
		2											
		3											
H	16 000	4	1				1						
		5											
U	18 000	6	1	1									
		7											
		8											
U	17 000	9	1	1		3	5						
		10											
		11											
P	19 026	12			3		1						
		13											
		14											
		15											
P	33065	16	1			1							
		17											
		18											
		19											
		20											
S	07 061	21		11	2		2						
	35 000	22	61	18	26	25	56	1					
	25 00[illegible]	23	1	1									
	12 00	24	25	153	12	15	12						
M	19 061	25			2								
		26											
H	19 123	27				1							
	64 000	28	1			1							
P	52 000	29	3		2	1							
	04 00[illegible]	30		2									
S	03 000	31		5	5	4							
	07 046	32		4			1						
P	1 026	33			2								
	19 110	34			6								
	19 110	35			6								
	19 005	36			1								
	[illegible]	37			1	3							
	19 12[illegible]	38			1								
	19 043	39				2							
		40											

RIOSP PROGRESS REPORT

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Page 2 of 2

Project 83 Site A Sp.list ref. no 83ALD Date SEPTEMBER 75

	331	332	223	334	335	330					
1											
P 33077 42				1							
3											
4											
5											
6											
7											
8											
9											
0											
1											
2											
3											
4											
5											
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PROP RECORD REPORT

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P/J South
DM 11/3/77

LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SITE B (L)

Collection Date SEPTEMBER S.P. 3 Species List Ref. No. 83 B L D

Sampling Means LITTER DVAC Sorting Means BERLESE

Litter wt 576 870 382 424 937

IDer Boschen Sept 75

Species Reference Number		Sample Number (Berlese calibration → from 392) #390	#391	#392	#393	#394	#421	7	8	9	10	Total
ORD Family 27 061	1	1										
	2											
	3											
04 004	4	3										
29 000	5			1			1					
12 000	6		2									
350.0	7	4	2	33	25	9						
	8											
	9											
	10											
	11											
25 000 I	12		1									
	13											(1)
18 000	14	1										
16 000	15	3										
19 000 I	16	1	2	1	2	3						
19 026	17				1							
33 079	18						1					
	19											
33 000 U	20	1	2		6	3						
	21											
	22											
	23											
	24											
	25											
	26											
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38											
	39											(1)
	40											

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P/N NORTH DM 11/13/75

LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SITE C (3)

Collection Date September S.P.3 Species List Ref. No. 83 C LD

Sampling Means LITTER DVAC Sorting Means BERLESE

Ider Boschen Sept 75

litter wt 987 1069 1041 730 808

Species Reference Number		Sample Number #336	#337	#338	#339	#340	#381 BERLESE CALIB. → from 336	7	8	9	10	Total
PRO Priority	1											
C 27 061	2				1	24						
C 18 000	3	1										
	4											
	5											
H 19 123	6					1						
P 19 005 II	7	1		2	2		1					
P 33 000 LL	8	5	3	2								
	9											
	10											
I 19 02[illegible]	11	6										
	12											
12 [illegible]	13	7		2		3						
	14											
	15											
	16											
04 [illegible]	17	13										
[illegible] 35 000	18	57										
I 29 000	19		1	1		4						
	20											
H 19 123	21					3						
	22											
19 [illegible]	23					1						
16 000	24	1		1								
C [illegible] 061	25					1						
P 33 [illegible] LL	26						2					
	27											
P 33 065	28	1										
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38											
	39											
	40											

QC DEK

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number E3 RIO BLANCO Site Name & Number SITE D (Sagebrush)

Collection Date SEPTEMBER S.P.3 Species List Ref. No. 83D LO

Sampling Means LITTER DVAC Sorting Means BERLESE DM 11/13/77

Litter wt gms 139 162 225 215 170 IDer Boshen Sept 75

	Species Reference Number		Sample Number (BERLESE CALIBRATION → from 375)										
			#375	#376	#377	#378	#379	#418	7	8	9	10	Total
	GRO from	1				1							
		2											
		3											
		4											
O	27 061	5			3								
		6											
		7											
U	17 000	8			1			1					
		9											
		10											
H	18 000	11			1		2	4					
		12											
		13											
S	19 071	14	1		1								
		15											
		16											
		17											
P	19 043	18			1/2								
U	27 0004	19					1	1					
		20											
U	35 000	21	13		1	10	3	1					
P	33 019	22			1		1						
		23											
		24											
		25											
P	33 004	26		1									
		27											
		28											
		29											
		30											
		31											
		32											
H	19 110	33	11										
H	19 1[illegible]	34	1										
U	35 000	35			1	1							
H	24 000	36						1					
		37											
P	33 0[illegible]	38	1										
		39											
		40											

LBOL

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LAB ANALYSIS - INVERTEBRATES

Mixed brush

Project Name & Number 83 RIO BLANCO Site Name & Number SITE 5

Collection Date SEPTEMBER S.P.3 Species List Ref. No. 835 LD

Sampling Means LITTER DVAC Sorting Means BERLESE

IDer Bostelman Sept 75

littercut 103 197 192 182 356

Species Reference Number		Sample Number → (Barber Collection) from 365										Total
ORD FAM		#336	#366	#360	#368	#369	#43	7	8	9	10	
P 50 000	1		1			1						
P 29 000	2		5		3							
	3											
	4											
	5											
	6											
	7											
	8											
	9											
H 18 003	10			2		1						
C 27 001	11			1								
	12											
	13											
U 17 000	14			3		1						
	15											
	16											
	17											
C 14 004	18		17	4	32	5						
	19											
	20											
P 19 005	21			2								
	22											
U 17 001	23	3			8	2						
C 35 000	24	41	303	37	103	15						
P 23 005	25		3	3	1	2						
	26											
	27											
H 19 123	28			1	1							
	29											
	30											
	31											
	32											
	33											
F 24 000	34	1										
A 23 000 U	35	4		2								
H 19 123	36	1			1							
U 27 001	37			2	1							
C 19 019	38			1								
19 099	39				1							
H 16 [illegible]	40				1	3						

RBO [illegible]

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Page 2 of 2

Project 83 Site 6 Sp.list ref. no. 835LD Date Sept 78

		365	366	367	368
P 33077	41			2	
P 33000	2		1	1	3
P 33079	3		2	1	1
	4				
	5				
P 33020	6	1			
	7				
	8				
	9				
	0				
	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
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RBOUP PROPERTY RETURN

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DR 11/13/75

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site 1 Greasewood-sage

Collection Date 14 July 75 S.P. 2 Species List Ref. No. 83A TD

Sampling Means Trap DVAC Sorting Means Berlese

BEIC 7 Oct 75 Chrysothamnus nauseosus Rabbitbrush

Species Reference Number		.660 213	.229 214	.229 215	.330 216	.432 217	6	7	8	9	10	Total
		Sample Number					plant size - diameter meters					
	1					1						
	2	12		2	10							
	3	1										
	4											
	5											
	6											
	7	3	3	1	6	2						
	8	9	4	1	1	3						
	9	4	4	4	2	7						
	10	39	13	64	90	29						
	11											
	12	1			2							
	13											
	14											
	15											
	16											
	17											
	18	1										
	19											
	20											
	21											
	22											
	23											
	24				1	1						
	25					1						
	26	1				2						
	27					5						
	28	1	2			23						
	29											
	30											
	31	5		1								
	32					15						
	33				9							
	34											
	35											
	36											
	37											
	38	2	2									
	39	1				1						
	40											

food habit code

lined out — do not include in calculations

1] family unknown

2] immature

OK BCH

REQUEST PROCESSING

Project 83 Site 1 Sp. list ref. no. BBATD Date July 75

		213	214	215	216	217
P 19625	1	2	1		1	4
	2					
H 24160 XI	3	2	1			
P 19043	4					
	5					
	6					
	7					
H 18003	8		1			
F 23077	9	1	2			
P 19024 XI	50				1	
H 19123	1			1		
F 27049	2	1				
P 27070	3	2	1			
H 190 XI	4	3	1	2	3	2
F 19005	5	1			1	
P 19025	6	2				
H 16000	7	1				
H 16000	8	2				
H 17024	9	1				
H 17 XI	60	3	1		3	3
H 1800 3	1	2	4		1	
H 18003	2	1				
F 25000	3		1			
P 19024	4		1			
F 2	5		1			
H 25 XI	6	2			1	
P 191 1	7			1	1	E
H 1800 4	8				1	
F 27037	9					1
H 25071	70	CK - use				2
H 240201	1					2
F 19026	2					2
P 19026	3					6
F 25000	4					4

RBCCP PRELIMINARY REPORT

378

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LAB ANALYSIS - INVERTEBRATES

DM 11/12/75

Project Name & Number Rio Blanco 83 Site Name & Number P-I South Slope #2

Collection Date 15 July 75 S.P. 2 Species List Ref. No. 83B TD

Sampling Means Trap DVAC (Shadscale) Sorting Means Berlese

9 Sept 75 EK Atriplex confertifolia

Species Reference Number	plant diameter (meters) .508	.254	.330	.356	.330	6	7	8	9	10	Total
	Sample Number 228	229	230	231	232						
1											
2	6	1	5	3	1						
3											
4											
5											
6					1						
7											
8											
9											
10	8		3	1							
11											
12											
13	1				2						
14	1		1								
15											
16											
17											
18											
19	3	26	2	10	13						
20											
21	1	2									
22											
23											
24											
25											
26											
27	1										
28	1										
29	1	1									
30	4		1								
31	1				2						
32	2										
33	6	12	1								
34	1										
35		2									
36		1									
37		1									
38		2									
39		1									
40		2									

Food abuts code

lived out — do not include in calc.

1] family unknown
2] immature

ae Beal

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Project 83 Site 3 Sp.list ref. no. 83BTD Date 15 July 75

		228	229	230	231	232
H	17038 41			3		
H	18038 2				1	
H	19123 3				1	
P	19043 4				3	
F	27014 5				1	
H	16030 6					1
H	17024 7					1
H	19110 8					1
	9					
	0					
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
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	0					

380

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DM 11/13/75

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number P-I North Slope #2

Collection Date 21 July 1975 S.P. 2 Species List Ref. No. 83C TD

Sampling Means Trap DVAC GAGE BRIGHT Sorting Means Berlese

Artemesia tridentata King Sept 75

foodhabit code	Species Reference Number		Plant diameter (meters) .508 Sample 248	.356 Sample 249	.356 Sample 250	.305 Sample 251	.381 Sample 252	6	7	8	9	10	Total
C	27011	1	3		9	5	1						
		2											
		3											
		4											
P	19011-2	5	1	1	2		7						
P	29000	6	3										
		7											
C	27021	8	11	2	1		4						
		9											
H	19123	10			1								
		11											
		12											
P	29000	13		2									
		14											
		15											
		16											
H	19000	17	21	2	9	2	10						
		18											
		19											
		20											
		21											
		22											
		23											
H	19011	24	2		2		2						
		25											
		26											
	27	27	1										
H	19123	28	1				1						
C	19019	29	1										
F	27	30	4										
		31	1										
		32	3		1		1						
S	0005	33	2	1									
		34		1									
P		35			1								
	27014	36				1							
P	19084	37				1							
P	19033	38				1							
P	29011	39				2							
P	19110	40					1						

lined out do not include in calculations

1) immature of unknown family

POSITIVE

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Page 2 of 2

Project 83 Site #3 Sp.list ref. no. 83CTD Date 21 July 83

	248	209	250	251	262						
P	19026	41									
S	04005	2									
H	19099	3									
		4									
		5									
		6									
		7									
		8									
		9									
		0									
		1									
		2									
		3									
		4									
		5									
		6									
		7									
		8									
		9									
		0									
		1									
		2									
		3									
		4									
		5									
		6									
		7									
		8									
		9									
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		3									
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		6									
		7									
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LAB ANALYSIS - INVERTEBRATES

SAGEBRUSH DM 11/13/75

Project Name & Number 83 RIO BLANCO Site Name & Number SITE D (4)

Collection Date JULY S.P. 2 Species List Ref. No. 83 D TD

Sampling Means TRAP DVAC Sorting Means Berlese

Artemesia tridentata SAGEBRUSH King Sept 75

Species Reference Number	Plant diameter (meters) .457 Sample Number #163	.356 #164	.635 #165	.229 #166	.356 #167	6	7	8	9	10	Total
1	1				1						
2	1										
3		37	3X								
4	1		1	1							
5											
6											
7											
8											
9											
10											
11											
12											
13		1	2	2							
14	2		1								
15											
16											
17											
18											
19											
20											
21	1		1								
22				1	1						
23											
24	1			1							
25	1	4	2								
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
37											
38	1		1	1							
39											
40											

fed habit case

lined out / don't include in calculations

1] unknown family

2] immature

OR COL

383

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Project 83 Rio Blanco Site D Sp.list ref. no. 83DTD Date July (

	163	164	165	166	167
1					
2					
3					
4	2				
5	3	5	9	1	1
6	1				
7	1				
8	1				
9			1		
50			1		
51			1		1
52				1	1
53				4	
54					1
55	3				
56				1	
7					
8			1		
9					
60					
1					
2					
3					
4					
5					
6					
7					
8			1		1
9					
0					
1					
2					
3					
4					
5					
6					
7					
8					
9					
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RB-083P

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LAB ANALYSIS - INVERTEBRATES

Mixed Brush

Project Name & Number 83 Rio Blanco S.P. 2 Site Name & Number SITE 5A (AMLA)

Collection Date JULY Species List Ref. No. 83 5 TD AMLA

Sampling Means TRAP D-VAC Sorting Means Berlese DM 11/13/75

Amalanchier utahensis Servicecherry Ring Sept 75

food habit code	Species Reference Number	plant diameter (meters) .330 x173	.406 x174	.686 x175	Sample Number .229 x176	.432 x177	6	7	8	9	10	Total
	1											
	2			6	1	1						
	3		1	1		2						
	4	1		2		2						
	5					13						
	6			2	1							
	7					2						
	8											
	9											
	10			4		1						
	11	1		2		4						
	12											
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20											
	21											
	22 1)											
	23				1							
	24											
	25											
	26			2		2						
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38	1										
	39	5	3	14	1	3						
	40	1										

Fixed out - do not use in calculations

1) immature

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oject 83 Rio Blanco Site 5 AMLA Sp.list ref. no 835TD Date July

BD FAM	173	174	175	176	177
18 003 I 41	1				
25 [illegible] 42	1				
[illegible] 43		4	1	4	
16 000 44				1	
19 103 45		1			
18 003 46		1			
[illegible] 47			1		
17 [illegible] 48				2	
18 003 49				1	
18 012 50				1	
1					
2					
3					
4					
5					
6					
7					
8					
9					
60					
1					
2					
3					
4					
5					
6					
7					
8					
9					
70					
[illegible] 1	1	2	4	1	2
2					
3					
4					
5					
6					
7					
8					
9					
80					
[illegible] 1	1		2		
2					
3					
4					
5					
6					
7					
8					
9					
0					

386

Symphoricarpos Snowberry oreophilus

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LAB ANALYSIS - INVERTEBRATES

Mixed brush

Project Name & Number 83 RIO BLANCO S.P 2 Site Name & Number SITE 5 BYMPH

Collection Date JULY Species List Ref. No. 835 TD SYMPH

Sampling Means TRAP DYAC. Sorting Means Berlese DW 11/13/75

IDer King Sept 75

~~Amblyodiplax utahensis~~

Species Reference Number	plant diameter (meters) .203	.406	.305	Sample Number .203	.305	6	7	8	9	10	Total
	#168	#169	#170	#171	#172						
ORD FAMILY 1					18						
27 2	1										
27 3				1							
4											
5											
1) 6											
H 24 0201 7			1								
8											
9											
P 23 10	1				1						
11											
12											
13											
H 18 01 14	1										
15											
16											
27 17					4						
18											
19	1	4	1								
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
32											
F 25 014 33	3										
P 19 043 34	1										
S 04 041 35	2										
A 35 000 36		5	9								
N 19 123 37		2	1								
H 16 006 38		1									
N 07 003 39			1								
H 18 003 40											

lined out / do not use in calculations

1) immature

OC BOX

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Page 1 of 2

Project 83 Rio Blanco Site SITE 5 Sp.list ref. no. 835 TP Date JULY

CRD	FAM		168	169	170	171	172	SUMPH
17	COSI	41			1			1
		42						
		43						
		44						
		45						
		46						
		47						
		48						
		49						
		50						
		51						
		52						
		53						
		54						
		55						
		56						
		57						
		58						
		59						
		60						
		61						
		62						
		63						
		64						
		65						
		66						
		67						
		68						
		69						
		70						
		71						
		72						
		73						
		74						
		75						
		76						
		77			1			
27	COSI	78				1		
		79						
		80						
		81						
		82						
		83						
		84						
		85						
		86						
		87						
		88						
		89						
		90						

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388

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Rabbitbrush Site A (1) Greasewood/sage

Collection Date 12 Sept. 75 S.P.? Species List Ref. No. 83A TD DM 11/3/75

Sampling Means TRAP DVAC Sorting Means hand Rel. ss BEKing Oct 75

Chrysothamnus nauseosus Rabbitbrush 303

Food habit code	Species Reference Number		.254 plant diameter (meters) 203 1	.305 204 2	.610 305 3	.660 306 4	.457 307 5	DVAC from Sagebrush #329	Pitfall #380	from 332 303 8	9	10	Total
		1			1		1		1				
		2							5				
		3											
		4											
		5											
		6											
H	19000	7	1										
H	19123	8	5	3	5	6							
		9	1	3		3	1						
		10	7	1	3	47	30						
P		11	1										
		12	2						1				
		13											
		14	2	1		1							
		15											
		16											
		17											
H		18				1	1						
		19											
		20											
		21											
		22											
		23											
		24											
		25											
H	15000	26					1	4					
		27											
H	11000	28	9		2	9	6	3	22				
		29											
		30											
		31						1					
		32											
		33						3					
		34											
H	15000	35		1									
		36											
		37											
		38	1										
P		39	1										
		40											

Lined out - do not use in calculations

1] immature

2] unknown family

ON BCR

389

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Project 83 Site A Sp.list ref. no. 83ATD Date 12 Sept

		303	304	305	306	307
	41					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	50					
	1					
	2					
	3					
U 19ACCUT	4		1			
	5					
	6					
	7					
H 16000	8				2	
	9					
[illegible]	60	1	1	1		
H 18.03	1			1	1	
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	70					
	1					
	2					
	3					
	4					
P 19043	5	5	1	1		
S 04005	6	1				
F 27076	7	1			1	
[illegible]	8	5				
C 27061	9	3	5	3	2	
H 19110	80	1				
H 16003I	1		3			
H 22[illegible]	2					
H 25045	3					
H 17024	4			1		
H 19123	5			1	H	
H 16000	6			1		
H 24065I	7			1		
H 19123	8				1	
H 17022	9			1		
F 27076	90				1	

[illegible]

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Page 3 of 3

Project 83 Site Site A Sp.list ref. no. 83ATD Date 12 Sept. 75

		303	304	305	306	307	382	419
P	50000	91				2		
H	18003 I	2				1		
H	18003 I	3				2		
H	18005	4				2		
C	27061	5				1		
H	18003	96					3	
H	18003	97					1	
C	27061	98					2	
		9						
		0						
		1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		0						
		1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		0						
		1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		0						
		1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		0						

391

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P/J Soutt

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site B (2)

Collection Date 12 Sept 75 3.P.3 Species List Ref. No. 83BTD

Sampling Means TRAP DVAC Sorting Means Berlese DM 4/13/75

Atriplex confertifolia shadscale Bering Sept 75

Food Habits Code	Species Reference Number	Plant diameter (meters) .406 407 X1	.203 408 X2	.406 409 X3	.178 Sample Number 410 X4	.254 411 X5	425 DVAC from 409 CALIB Count 6	437 Berlese Calib from 408 #Berlese 7	8	9	10	Total
	1											
H	35000 2	2		9	3	1						
H	16000 3		1	1	1							
	4											
	5											
H	15000 [1] 6	1	6									
	7											
	8											
F	27018 9						1					
	10											
H	15000 [1] 11			1								
F	27018 12											
F	27020 13	3	1	1								
F	27005 14		1									
	15											
	16											
	17											
	18											
D	27011 19	3										
	20											
	21											
H	15003 22	1			1			8				
	23											
	24											
	25											
	26											
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
F	27011 36				1		1					
	37											
	38											
	39											
	40											

lived out - do not include in calc.

1] family unknown
2] immature, all others adult

Project Rio Blanco 83 Site B Sp.list ref. no. 83BTD Date 12 Sept. 75

		407	408	409	410	411
	1					
	2					
	3					
	4					
	5					
	6					
	7					
H 19112	8	2				
H 19123	9	1				
M 19015	0	1				
P 19043	1	1				
P 19023	2	4		1	2	1
	3					
U 19004	4		1	1		
H 19110	5			1	2	
C 04005	6			1	1	
U 19013	7				1	
H 19003	8				1	
C 04005	9				1	
H 19123	60				1	
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	0					
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	0					
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	0					

393

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P/N North

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site C (3)

Collection Date 12 Sept 75 S.P.3 Species List Ref. No. 83C TD

Sampling Means TRAP DVAC Sorting Means Burlese

Artemesia tridentata Sagebrush

I collect de

Plant diameter (meters)

Species Reference Number	.254 318 1	.406 319 2	.432 320 3	.584 321 4	.330 322 5	Sample Number Select from 338 DVAC Sample 359	Select from 338 DVAC Sample 330	8	9	10	Total
O 27061 1		2	2	6	1						
2											
3											
4											
P 19005 5		1	1	3	7						
P 29000 6			3								
7											
21061 8						1					
9											
10											
11											
12											
13											
14											
15											
16											
35000 17				28	2						
18											
19											
P 3306 20						1					
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
27000 31				3							
C. 02000 32			3		1						
33											
H 18018 34					1	1					
F 33079 35		1		1							
36											
37											
38											
39											
40											

Find out if not include in calc.

1) immature

2) ... humus family

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Page 2 of 2

Project 83 Site C Sp.list ref. no. 83C TD Date Sept. 75

	318	319	320	321	322	357	330
P 19026 41	1					1	
2							
H ~~12.99~~ I 3	2						
P ~~1.15~~ I 4	2	1	1				
H 18003 5		1				1	
H 18004 6		1		4	6		130
H ~~1.~~ ~~1~~ 7			1				
P 25021 I 8			2		2		
H 1912 3 49				7	1	2	
~~1~~ 50				24	7		
~~1041~~ 1				3			
P 19084 I 2					1		
3							
4							
5							
6							
7							
8							
9							
60							
1							
2							
3							
4							
5							
6							
7							
8							
9							
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
0							

395

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LAB ANALYSIS - INVERTEBRATES

Sage

Project Name & Number Rio Blanco 83 Site Name & Number Site D (4)

Collection Date Sept. 75 4.P.4 Species List Ref. No. 83D TD

Sampling Means TRAP DVAC Sorting Means Berlese

DM 11/13

Absolute Artemesia tridentata Sage King Sept 75

Taxa number code	Species Reference Number	Plant diameter (meters) .508 370 1	.305 371 2	.711 372 3	.203 373 4	.254 374 5	Sample Number from 371 DVAC collection 382	Berlese collection from 374 419	8	9	10	Total
	1											
	2											
	3											
	4											
0 27061	5			1								
	6											
	7											
	8											
U 35000	9	18	2	50	14	6						
	10											
	11											
	12											
H 19123	13	1										1
	14											
	15											
	16											
	17											
	18											
	19											
V	20											
P 33000	21			1		2						
	22											
	23											
P 33019	24			1	1	1						
P 33020	25			1	1	1						
	26											
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
P 33045	38			1	1		1					1
P 19065	39			1								
	40											

Lined out / do not include in calculations

1) unknown family
2) immature

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Project 83 Site D Sp.list ref. no. 83DTD Date Sept. 75

		370	371	372	373	374	382	419
	1							
	2							
	3							
	4							
	5							
	6							
11 19123 H	7	1						
	8							
	9							
	50							
	1							
	2							
	3							
	4							
	5							
U 27000 U	6	2						
H 19101	27	1						
~~U 190~~	8	1						
H 18003	9	1		1	1			
F 24000 U	60		1					
~~P 190~~	1		1	2	1			
C 27061	2			1	1			
~~27061~~	3			5				
18018	64			1			21	
N 16~~0~~	5				1			
H 19042	6				1			
H 18003	7				1			
H 18003	68						1	
	9							
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	0							

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LAB ANALYSIS - INVERTEBRATES

Mixed brush

Project Name & Number Rio Blanco 83 Site Name & Number Site 5A

Collection Date Sept. 75 S.P.3 Species List Ref. No. 835 TO Aim 1a

Sampling Means Trap DVAC Sorting Means Berlese

Amalanchier utahensis Serviceberry from 309 King Sept 75

Species Reference Number	plant diameter (meters) .229 308 1	.279 307 2	.610 310 3	.305 311 4	.229 312 5	Sample Number 358 DVAC & CALIB SAMPLE	319 309 Berlese Calib from 309	8	9	10	Total
1											
2											
3	5										
4			1	11	2		1/3				
5											
6	1										
7											
8		64		4	2						
9											
10					1						
11											
12											
13						nothing					
14	1	1		1							
15											
16											
17											
18											
19											
20											
21											
22											
23											
24			1								
25		2									
26		1									
27											
28											
29											
30											
31											
32											
33			1				1				
34											
35											
36											
37											
38					1						
39											
40											

lived out — do not include in calculations

#1 1) unknown family 2) immature

OK DEK

398

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Page 2 of 2

Project 83 Site 5 Sp.list ref. no 835 HS Date Sept. 75

Amla

		308	309	310	311	312	358	395
	1							
	2							
	3							
	4							
	5							
	6							
	7							
H 17024	8			7				
	9							
P 15018	50		1		7			
F 24000	1	1						
H 16000	2	1			1	4		
H 18003	3	1						
H 18003	4	2						
P 50000	5		1		1			
F 24000	6		3					
U 19086	7			1				
P 19013	8			2				
H 18003 24000	U			1	1	1		
S 04005	60			1	1	2		
P 17027	1			1				
H 19011	2			1	3	1		
19013	3			1	1	1		
F 24000	U 4			2				
H 19110	5				1			
F 27037	6				1			
F 27014	7				1			
H 18003	8				1			
H 19005	9				1	4		
H 16000	70					1		
X 19000	1				1	1		
F 17025	2					1		
H 17024	3					1		
H 19123	4					1		
H 18003	5					1		
H 18003	6					1		
H 18003	7					2		
H 19002	8					1		1
F 27049	9					1		
F 27049	80					1		
S 22000	1					1		
F 25019	2					1		
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	0							

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Snowberry
Symphoricarpos oreophilus

C11.3.3

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LAB ANALYSIS - INVERTEBRATES

Mixed brush DM 11/3/75

Project Name & Number Rio Blanco 83 Site Name & Number 5B (Symph)

Collection Date Sept. 75 S.P3 Species List Ref. No. 835 TO Symph

Sampling Means TRAP DVAC Sorting Means Berlese

~~Amblanchier utahensis~~ King Sept 75

Species Reference Number		Plant diameter (meters) .203	.229	.330	.406	.483	DVAC from 316					
		Sample Number 313	314	315	316	317	359 CALIB PLANT	Berlese cat plant from 314 396	8	9	10	Total
	1											
	2			3	1			1				
	3	1			1			1				
	4											
	5					1						
F 27064	6	FIG USE IN CALC				1	BEAK					
	7											
U 35000	8			5	220	1						
	9											
P 33077	10		3		3							
P 33020	11	1	1	2	1							
	12											
	13											
H 12012	14		3	2	3							
	15											
	16											
	17											
H 15[illegible]	18		1		3							
H [illegible]	19	1		2		1						
	20											
	21											
	22											
	23											
	24											
	25											
	26											
	27											
	28											
U 19123	29	1										
	30											
F 27014	31							1				
	32											
	33											
	34											
	35											
	36											
	37											
	38											
C 10023	39							1				
	40											

Seed hart code

Nothing

Lined out / do not use in calculations

okten

U unknown family

400

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Page 2 of 2

Project 83 Site 5 Sp.list ref. no. 83570 Symph Date Sept. 75

		313	314	315	316	317	359	396				
	1/1											
I	19123 2	1										
P	~~19005 I 3~~	~~1~~										
H	17024 4	1										
H	16000 5	1	1									
S	04000 6	1	5	5	13	1						
F	27018 7	1										
H	19110 I 8		1									
P	22009 9		1									
H	16000 50		6	6		2						
H	17031 1		2									
~~H~~	~~17000 I 2~~		~~1~~									
H	15003 3		1	1		1						
F	27014 4		1									
	27029 5		1			5						
H	19123 6			1	1	1						
H	18023 7			1								
H	15003 8			1								
H	18000 9			1	1							
F	27018 60			1				2				
F	27014 1			1								
F	27014 2			1								
~~S~~	~~25042 3~~			1	1							
	9086 4				3							
~~H~~	~~19123 I 5~~				2							
H	19123 6				3							
H	19000 7				1							
S	25042 8				2							
F	25081 9				1							
F	27018 70				1							
~~I~~	~~19005 1~~					1						
P	~~19026~~ 2					2						
H	17032 3					1						
~~H~~	~~22004 I 4~~					1						
C	~~24041 5~~					1						
F	27046 X 6					1						
	7											
	8											
	9											
	0											
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	0											

C11.3.4FF

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site A

Collection Date 12 Jul. 75 Species List Ref. No. 83AHS

Sampling Means Sweep (Herb) Sorting Means hand

BEK OCT 75

food habit code	Species Reference Number		192 Sample Number 1	2	3	4	5	6	7	8	9	10	Total
O	27061	1	7										
O	27011	2	5										
O	27011	3	4										
		4											
		5											
		6											
		7											
		8											
F	27016	9	3										
		10											
F	27013	11	11										
		12											
P	27027	13	1										
F	27014	14	3										
		15											
		16											
H	19110	17	1										
H	19123	18	9										
		19											
		20											
		21											
		22											
U	25095	23	2										
		24											
H	18003	25	87										
		26											
		27											
H	18003	28	1										
		29											
		30											
		31											
		32											
		33											
S	04005	34	1										
H	16000	35	22										
		36											
		37											
		38											
P	33048	39	2										
P	33079	40	1										

C11.3.4

ecology consultants, inc.

Project 83 / 192 Site A Sp.list ref. no. 82A HS Date 12 July 75

| | | |

403

C11.3.4

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site B (C

Collection Date 12 July 75 Species List Ref. No. 83 B HS

Sampling Means Sweep (Herb) Sorting Means hand

BEIC OCT 75

food habit code	Species Reference Number		191 Sample Number 1	2	3	4	5	6	7	8	9	10	Total
O	27061	1	1										
		2											
		3											
		4											
		5											
F	27018	6	4										
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											
		21											
F	27047	22	1										
P	27029	23	1										
S	04005	24	22										
U	35000	25	13										
P	19043	26	1										
P	19043	27	1										
S	02000	28	2										
H	17024	29	2										
H	18003	30	11										
H	18003	31	15										
H	18016	32	1										
P	33019	33	3										
F	25061	34	2										
		35											
		36											
		37											
		38											
		39											
		40											

404

C 11.3.4

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site C (3)

Collection Date 12 July 75 Species List Ref. No. 83C HS

Sampling Means Sweep (Herb) Sorting Means hand

BEL OCT 75

Food Habit Code	Species Reference Number		Sample Number 190 1	2	3	4	5	6	7	8	9	10	Total
		1											
O	27061	2	1										
O	27061	3	8										
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
O	27061	17	2										
F	27016	18	1										
F	27018	19	2										
F	27022	20	1										
F	27022	21	1										
F	27018	22	1										
U	19000	23	1										
P	19054	24	1										
S	02000	25	1										
S	02000	26	1										
S	04005	27	5										
H	18005	28	2										
H	18005	29	1										
H	18004	30	1										
H	18003	31	2										
H	18003	32	1										
H	18003	33	1										
H	18003	34	1										
		35											
		36											
		37											
		38											
		39											
		40											

U unknown family

405

C11.3.4

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco Site Name & Number Sage Site 4

Collection Date 12 July Species List Ref. No. 83DHS

Sampling Means herb sweep Sorting Means hand

BEK OCT 25

food habit code	Species Reference Number		Sample Number 1 (108)	2	3	4	5	6	7	8	9	10	Total
O	27061	1	2										
O	27061	2	2										
O	27061	3	6										
		4											
P	27029	5	3										
P	27029	6	1										
		7											
		8											
		9											
		10											
H	18016	11	2										
		12											
		13											
		14											
P	17025	15	1										
H	17032	16	1										
H	17024	17	1										
H	17024	18	1										
H	17024	19	2										
H	17024	20	25										
H	17024	21	1										
H	17038	22	2										
H	19095	23	6										
P	19043	24	4										
H	18018	25	9										
H	18005	26	11										
H	18004	27	1										
H	18005	28	1										
P	33077	29	2										
P	33074	30	5										
P	33020	31	1										
F	27014	32	1										
F	27016	33	1										
F	27022	34	1										
P	27029	35	4										
P	27029	36	1										
H	07003	37	1										
U	25017	38	4										
U	25095	39	2										
S	12000	U40	1										

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C11.3.4

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Page 2 of 2

Project 83 Site 4 Sp.list ref. no. 83DHS Date 12 July 75

P	25040	41	1											
H	12003	2	22											
H	12003	3	4											
		4												
		5												
		6												
		7												
		8												
		9												
		0												
		1												
		2												
		3												
		4												
		5												
		6												
		7												
		8												
		9												
		0												
		1												
		2												
		3												
		4												
		5												
		6												
		7												
		8												
		9												
		0												
		1												
		2												
		3												
		4												
		5												
		6												
		7												
		8												
		9												
		0												
		1												
		2												
		3												
		4												
		5												
		6												
		7												
		8												
		9												
		0												

401

C11.3.4

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number MB Site 5

Collection Date 12 July 75 Species List Ref. No. 835 HS

Sampling Means Sweep (Herb) Sorting Means hand

BEIC 0475

	Species Reference Number		Sample Number 189 1	2	3	4	5	6	7	8	9	10	Total
		1											
		2											
O	27061	3	19										
O	27061	4	7										
		5											
		6											
		7											
		8											
		9											
		10											
		11											
U	25056	12	2										
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											
		21											
		22											
		23											
		24											
		25											
P	19043	26	1										
P	19043	27	17										
H	19110	28	8										
H	19123	29	20										
H	19095	30	1										
P	22077	31	8										
P	22019	32	4										
U	25000 U	33	30										
U	19000 U	34	1										
H	11000	35	4										
H	07003	36	1										
H	18018	37	142										
H	17024	38	6										
H	17024	39	2										
H	17024	40	1										

U unknown family

408

C11.3.4

ecology consultants, inc.

Project 83 Site 835 HS Sp.list ref. no. 835HS Date 12 July 75

189

H	17024	41	4
H	17024	42	16
H	17024	43	2
H	17024	44	6
H	17024	45	4
H	17024	46	2
H	17024	47	1
H	17024	48	2
H	12004	49	3
H	18016	50	8
H	18003	1	15
H	18003	2	16
H	18003	3	10
H	18003	4	4
O	27061	5	1
O	27061	6	7
F	27014	7	1
F	27037	8	1
F	27037	9	1
F	27037	60	1
F	27049	1	1
F	27046	2	2
F	27018	3	1
F	27018	4	1
F	27018	5	2
F	27018	6	1
F	27018	7	3
P	27029	8	3
P	27029	9	1
P	27029	70	1
P	27029	1	1
P	25035	2	2
H	16000	3	12
S	04005	4	16
F	25081	5	14
		6	
		7	
		8	
		9	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	

409

C11.3.4

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco Site Name & Number Site A (1) HS

Collection Date 12 Sept. 75 Species List Ref. No. 83A HS

Sampling Means Sweep (Herb.) Sorting Means hand

BEL OCT 75

Species Reference Number		388 X	Sample Number 2	3	4	5	6	7	8	9	10	Total
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
H 19123	18	1										
	19											
	20											
H 17032	21	106										
	22											
	23											
	24											
	25											
	26											
	27											
	28											
	29											
	30											
H 07003	31	1										
	32											
	33											
	34											
	35											
	36											
	37											
	38											
	39											
	40											

Need subset code

C11.3.4 (ECI)
ecology consultants, inc.

Project 83 388 Site A Sp.list ref. no. 8?AHS Date 12 Sept 75

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ecology consultants, inc.

Project 83 388 Site A Sp.list ref. no. 83A115 Date 12 Sept. 7

	17021	91	3
H	17024	92	3
H	17024	93	3
H	17024	94	1
H	18003	5	2
H	18003	6	1
H	18005	7	1
H	19110	8	1
H	19110	9	1
H	19110	100	1
M	19081	1	1
H	19123	2	1
H	19110	3	3
F	25103	4	1
F	25081	5	5
F	25081	6	5
F	24000	U 7	1
F	27015	8	1
F	27015	9	2
F	27014	110	3
F	27014	111	1
F	27068	112	1
F	27049	113	1
F	27022	114	6
F	27049	115	1
P	27029	116	1
P	27029	117	1
P	27029	118	3
		9	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	

C11.3.4

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site B (2)

Collection Date 12 Sept. 95 Species List Ref. No. 83B HS

Sampling Means Sweep (Herb) Sorting Means hand

BEH OCT 95

food habit code	Species Reference Number		247 Sample Number 1	2	3	4	5	6	7	8	9	10	Total
O	27061	1	1										
		2											
		3											
		4											
		5											
F	27018	6	7										
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
H	18018	18	32										
		19											
		20											
		21											
		22											
		23											
S	04005	24	2										
		25											
		26											
		27											
C	02000	28	3										
		29											
		30											
		31											
		32											
P	33079	33	1										
		34											
H	17024	35	1										
H	17024	36	3										
H	18016	37	7										
H	18000	38	3										
H	18003	39	50										
H	18003	40	7										

1) unknown family

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C 11.3.4

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Page 2 of 2

Project 83 347 Site B Sp.list ref. no. 83BHS Date Sept. 77

H	18003	41	5
H	18003	2	2
H	18003	3	1
P	19043	4	4
P	19043	5	1
H	19110	6	3
H	19123	7	1
H	19123	8	1
P	33077	9	1
P	27029	50	2
F	25081	1	1
H	25031	2	1
F	25014	3	1
F	25020	4	1
O	27061	5	1
O	27061	6	3
F	27014	7	1
F	27014	8	2
F	27049	9	3
F	27018	60	1
P	27029	1	1.
P	27029	2	1
P	27029	3	1
		4	
		5	
		6	
		7	
		8	
		9	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	

414

C11.3.4

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site C (3)

Collection Date Sept. 75 Species List Ref. No. 83C HS

Sampling Means Sweep (Herb) Sorting Means Hand

BEIC OCT 75

Food habit code	Species Reference Number	348	Sample Number 1	2	3	4	5	6	7	8	9	10	Total
		1											
		2											
		3											
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											
		21											
		22											
		23											
		24											
		25											
		26											
		27											
		28											
		29											
		30											
		31											
		32											
		33											
		34											
H	18016	35	72										
H	18003	36	7										
H	18018	37	5										
	25056	38	1										
U	25087	39	1										
U	25044	40	1										

C11.3.4

ecology consultants, inc.

Project 83 348 Site C Sp.list ref. no. 83C HS Date Sept 75

S	25042	4	1	1										
F	25081		2	1										
F	27018		3	1										
			4											
			5											
			6											
			7											
			8											
			9											
			0											
			1											
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			0											
			1											
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			0											
			1											
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			0											
			1											
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			0											

4/6

C11.3.4

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number B Sagebrush 4

Collection Date Sept. 75 Species List Ref. No. 830 HS

Sampling Means Sweep (Herb) Sorting Means hand

P.E.L. Oct 75

food dist code	Species Reference Number		350 / 1	2	3	4	5	6	7	8	9	10	Total
		1											
O	27061	2	1										
		3											
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
P	17025	15	8										
		16											
		17											
		18											
H	17024	19	1										
		20											
		21											
		22											
		23											
P	19043	24	1										
		25											
		26											
		27											
		28											
		29											
P	33079	30	30										
		31											
		32											
		33											
		34											
P	27029	35	1										
		36											
		37											
		38											
		39											
		40											

417

C11.3.4

ecology consultants, inc.

Project 83 1350 Site D Sp.list ref. no 83DHS Date Sept. 75

	H	1	
H	18003	2	8
		3	
P	19084	4	1
H	19123	5	6
U	25095	6	1
U	25023	7	1
H	17036	8	1
H	18015	9	2
H	16000	50	1
S	04005	1	1
O	27061	2	2
F	27018	3	1
F	27018	4	2
T	27049	5	5
P	27029	6	3
		7	
		8	
		9	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	

C11.3.4

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Mixed Brush #5

Collection Date Sept. 75 Species List Ref. No. 835 HS

Sampling Means D-Screen (Herb) Sorting Means hand

BEH OCT 75

	Species Reference Number		Sample Number 1	2	3	4	5	6	7	8	9	10	Total
		1											
		2											
C	27061	3	13										
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
U	25011	12	4										
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											
		21											
		22											
		23											
U	19000	24	2										
		25											
		26											
		27											
H	19110	28	1										
H	19123	29	13										
		30											
P	33077	31	9										
P	33079	32	3										
U	35000	33	3										
		34											
H	16000	35	1										
		36											
H	18018	37	1306										
		38											
		39											
		40											

C11.3.4

ecology consultants, inc.

Project 83 349 Site 5 Sp.list ref. no. 835HS Date Sept. 7[illegible]

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Q 11.3.4

ECI
ecology consultants, inc.

Project 73 (349) Site 5 Sp.list ref. no. 835 HS Date Sept. 75

U	25095	91	1												
U	25095	2	1												
F	25002	3	1												
S	25061	4	3												
F	25081	5	2												
F	25081	6	3												
H	25031	7	1												
	25042	8	1												
U	25	UI 9	1												
F	27014	100	1												
F	27014	1	1												
F	27014	2	1												
F	27014	3	14												
F	27049	4	1												
F	27037	5	3												
F	27018	16	1												
F	27018	7	1												
F	27018	8	1												
F		9	3												
I	27018	110	1												
I	27018	111	1												
F	27018	2	1												
	27018	3	1												
	27018	4	9												
F	27037	5	7												
P	27029	6	19												
P	27041	7	20												
I	27021	8	8												
F	27023	9	1												
F	27022	120	3												
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													

420

C11.3.5

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SITE A GREASEWOOD SAGE

Collection Date JULY Species List Ref. No. 83 A B

Sampling Means BEATING Sorting Means Berlese
BER OCT 75

Food habit code	Species Reference Number			Sample Number 1	2	3	4	5	6	7	8	9	10	Total
			1											
			2											
O	27	061	3	1										
			4											
			5											
			6											
			7											
			8											
			9											
			10											
H	18	018	11	20	20									
			12											
U	35	000	13	18										
			14											
			15											
			16											
			17											
			18											
			19											
H	16	000	20	29	17									
			21											
H	18	003	22	83	64									
H	17	024	23	3	6									
H	17	024	24	2	1									
P	17	021	25	4	4									
H	17	024	26	4	1									
H	17	032	27	2										
O	27	061	28	1	4									
U	19	000	29	1										
H	17	024	30	27	36									
H	17	024	31	55	113									
H	19	123	32	1										
H	18	003	33	47	42									
H	18	003	34	5	9									
H	18	018	35	10	13									
H	17	024	36		5									
H	18	003	37		2									
H	18	003	38		1									
P	19	084	39		3									
H	19	123	40		1									

1) unknown family immature

ON REM

421

C11.3.5

ecology consultants, inc.

Project [illegible] Site SAGE A Sp.list ref. no. 83AB Date JULY

ORD	FAM			
H	17	024	41	1
F	22	022	2	1
C	27	022	3	1
F	25	081	4	1
H	17	024	5	1
E	24	000	46	3
F	16	000	47	29
F	15	000	48	10
A	19	000IU	49	1
			50	
			1	
			2	
			3	
			4	
			5	
	33	077	6	1
	33	020	7	3
	33	079	8	2
			9	
			0	
			1	
			2	
			3	
			4	
			5	
			6	
			7	
			8	
			9	
			0	
			1	
			2	
			3	
			4	
			5	
			6	
			7	
			8	
			9	
			0	
			1	
			2	
			3	
			4	
			5	
			6	
			7	
			8	
			9	
			0	

402

C11.2.5

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 Rio Blanco Site Name & Number South PJ site E

Collection Date July Species List Ref. No. 83 B B Pinyon

Sampling Means Beating Sorting Means Berlese

Boshen Oct 75

Food habit code	Species Reference Number			Sample Number #292	#293	3	4	5	6	7	8	9	10	Total
	GRO	FAM	1											
			2											
			3											
			4											
			5											
H	18	018	6	2										
			7											
			8											
			9											
P	19	043	10	10	6									
P	19	084	11	1										
H	18	003	12	1	5									
O	27	061	13	1										
U	17	000UI	14	28	16									
H	16	000U 2	15	7										
H	16	000U	16	24	3									
P	25	011	17	1										
O	27	061	18		5									
H	04	005	19		7									
F	27	048	20	1										
F	27	048	21	1										
F	27	048	22	1										
F	27	036	23	1										
F	27	017	24	1										
P	27	029	25	1										
F	27	022	26	1										
F	27	023	27		1									
F	27	018	28		1									
F	27	018	29		3									
P	27	029	30		1									
U	19	000UI	31		1									
			32											
			33											
			34											
			35											
			36											
			37											
P	33	020	38	1	1									
			39	1	1									
			40											

1] unknown family immature

2] unknown family

ecology consultants, inc.

Project 83 Site Southpt #2 Sp.list ref. no. 838 Date July 75

		292	298
41			
2			
3			
33079 4	1	1	
33077 5	2	5	
6			
7			
8			
9			
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
0			

424

C11.3.5

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SOUTH PJ SITE B

Collection Date JULY Species List Ref. No. 83B B JUNIPER

Sampling Means BEATING Sorting Means Berlese
Boschen OCT 75

dist code	Species Reference Number ORD	FAM		Sample Number 1294	1295	3	4	5	6	7	8	9	10	Total
			1											
			2											
S	12	000	3		2									
U	35	000	4	12										
			5											
P	33	079	6	1										
P	33	077	7		1									
P	33	020	8	8	2									
			9											
			10											
			11											
H	18	016	12	8										
H	18	016	13	1										
C	24	000	14	2										
P	19	043	15	3										
H	04	005	16	3	28									
U	17	00011	17	9	4									
H	18	003	18		1									
H	19	123	19		3									
F	27	037	20		1									
H	18	003	21		1									
F	27	014	22		1									
F	27	023	23		2									
F	27	022	24		1									
F	27	022	25		1									
F	27	018	26		1									
H	27	024	27		1									
			28											
			29											
			30											
			31											
			32											
			33											
			34											
			35											
			36											
			37											
			38											
			39											
			40											

11 unknown family immature

ARBEC

425

C11.3.5

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number SITE C NORTH

Collection Date JULY Species List Ref. No. 83 C B PINYON

Sampling Means BEATING - PINYON Sorting Means Berlese

Boechen OCT 75

food habit code	Species Reference Number ORD	FAM		Sample Number 1 (X288)	2 (289)	3	4	5	6	7	8	9	10	Total
			1											
			2											
			3											
			4											
			5											
P	33	077	6		1									
P	33	020	7		4									
H	18	003	8	8	6									
H	17	000 UE	9	12	39									
H	19	123	10	1	5									
F	27	014	11	1										
F	27	014	12	1										
F	27	018	13	2										
P	22	008	14	1										
H	19	047	15		1									
O	27	061	16		2									
O	27	061	17		1									
H	18	018	18		12									
F	24	000 U	19		2									
H	16	000 U	20		17									
H	16	000 U	21		4									
F	27	017	22		1									
P	27	029	23		2									
F	27	047	24		1									
F	27	049	25		3									
			26											
			27											
			28											
			29											
			30											
			31											
P	33	000	32	1										
			33											
			34											
			35											
			36											
P	33	061	37	1										
			38											
			39											
			40											

1) unknown family immature

2) unknown family

ALBOL

426

C1.3.5

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number 83 RIO BLANCO Site Name & Number NORTH PJ SITE C

Collection Date JULY Species List Ref. No. 83 CB JUNIP

Sampling Means BEATING Sorting Means Berlese

BEK OCT 75

food habit code	Species Reference Number ORD	FAM		Sample Number #290	#291	3	4	5	6	7	8	9	10	Total
			1											
H	19	123	2	1										
U	35	000	3	3	6									
P	23	020	4	1	4									
			5											
			6											
			7											
			8											
			9											
H	19	123	10	2	5									
O	27	061	11	1										
H	16	000	12	1										
S	12	000	13		2									
H	17	024	14		4									
H	17	024	15		1									
H	18	003	16		1									
F	27	022	17		1									
F	27	049	18		1									
F	27	023	19		1									
			20											
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32											
			33											
			34											
			35											
			36											
			37											
			38											
			39											
			40											

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427

C11.3.5

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco Site Name & Number G-5 Site A

Collection Date Sept. 75 Species List Ref. No. 83 A B

Sampling Means Pipette Sorting Means Berlese

BEIL OCT 75

food habit code	Species Reference Number		416 X	417 X	3	4	5	6	7	8	9	10	Total
		1											
		2											
		3											
		4											
		5											
		6											
		7											
		8											
		9											
		10											
H	18018	11	42	5									
		12											
H	35000	13		22									
		14											
P	33079	15		2									
		16											
		17											
		18											
		19											
H	16000	20	18	4									
		21											
H	18003	22	6	3									
		23											
		24											
P	17021	25	2										
		26											
		27											
		28											
		29											
		30											
		31											
		32											
H	18003	33	5	3									
		34											
		35											
		36											
		37											
		38											
		39											
		40											

OLLIER

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Project 83 Site A Sp.list ref. no. 83AB Date Sept 75

			416	H17
	41			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
H	17024 50	37	5	
H	18000 u 1	2	1	
H	04005 2	3		
I	16000 3	3		
H	17024 4		3	
H	18003 5		5	
P	33078 6		1	
P	33020 7		1	
	8			
	9			
	10			
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	0			
	1			
	2			
	3			
	4			
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	6			
	7			
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	9			
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	3			
	4			
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	6			
	7			
	8			
	9			
	0			

u unknown family

429

C11.25

ecology consultants, inc.

LAB ANALYSIS - INVERTEBRATES

Project Name & Number: Rio Blanco 83 Site Name & Number: South PS Pinyon Bs #2

Collection Date: Sept. 75 Species List Ref. No.: 83B B (Pin)

Sampling Means: Beating Sorting Means: Berlese

BER OCT 75

Food Habit Code	Species Reference Number		Sample Number 412 (1)	413 (2)	3	4	5	6	7	8	9	10	Total
		1											
		2											
		3											
		4											
		5											
H	18018	6	2	4									
		7											
P	33079	8	2										
P	33077	9	1	1									
		10											
		11											
		12											
		13											
		14											
H	16000 u	15	3										
		16											
		17											
		18											
H	04005	19	28	14									
		20											
		21											
		22											
		23											
		24											
		25											
		26											
		27											
F	27018	28	1										
		29											
		30											
		31											
u	19086	32	1										
H	17024	33	3	3									
H	18003	34	1										
H	18016	35	2										
H	18000 u[1]	36	2										
P	33000 u	37	3	1									
P	33020	38	5										
P	33065	39	2	3									
H	16000 u	40	1										

[1] Unknown

C11.3.5

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Page 2 of 2

Project 83 412 413 Site B Sp.list ref. no. 83B.B Pitzow Date Sept. 75

16000 U	41	1	1												
27922	2	1													
12000	3		1												
	4														
	5														
	6														
	7														
	8														
	9														
	50														
	1														
	2														
	3														
	4														
	5														
	6														
	7														
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	7														
	8														
	9														
	0														

431

C.11.35

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number South PT #2

Collection Date 18 Sept 75 Species List Ref. No. 83B B Jump Pt

Sampling Means Beating Sorting Means Berlese

BEK OCT 75

Food habit code	Species Reference Number		Sample Number 414	415	3	4	5	6	7	8	9	10	Total
H	17024	1		1									
		2											
		3											
U	35000	4		3									
		5											
		6											
		7											
P	83020	8	1	2									
		9											
		10											
		11											
		12											
		13											
		14											
		15											
H	04005	16	1	1									
		17											
		18											
		19											
		20											
		21											
		22											
		23											
		24											
		25											
		26											
		27											
H	19110	28	1										
H	27006 I"	29	1	1									
H	16000	30	1										
H	16000	31	1										
P	27029	32		1									
H	17024	33		1									
		34											
		35											
		36											
		37											
		38											
		39											
		40											

I) immature

old BEK

RP367

432

C11.3.5

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number No. PJ. Site C

Collection Date Sept 75 Species List Ref. No. 83C B Pinyon

Sampling Means Beating Sorting Means Berlese

BEL OCT 75

Food Habit code	Species Reference Number		Sample Number 426 X	427 2	3	4	5	6	7	8	9	10	Total
		1											
		2											
		3											
		4											
		5											
P	33077	6	1	2									
P	33020	7	2										
		8											
		9											
H	19123	10		1									
		11											
		12											
		13											
		14											
		15											
		16											
		17											
H	18018	18	1										
		19											
		20											
		21											
		22											
		23											
		24											
		25											
H	17024	26	1										
P	17027	27	1										
P	22008	28	1										
H	16000	29	1										
P	19084	30	1										
P	33079	31	3										
P	33000	32	3	2									
P	17027	33		4									
H	18004	34		1									
P	19084	35		1									
P	17027	36		1									
		37											
		38											
		39											
		40											

all BEL

RECEIVED PROCESSED OCT 7

433

C.11.35

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number North RT Site 3

Collection Date Sept 1975 Species List Ref. No. 83C B Junip

Sampling Means Beating Sorting Means Berlese

BER OCT 75

	Species Reference Number		Sample Number 2428	2429	3	4	5	6	7	8	9	10	Total
		1											
		2											
		3											
P	33020	4	2	1									
P	33077	5	1										
		6											
		7											
		8											
		9											
		10											
		11											
		12											
	12000	13	1	4									
		14											
		15											
		16											
		17											
		18											
		19											
S	12000	20	1	10									
F	27014	21	1										
F	27022	22	1										
H	18016	23	1										
H	04005	24	2										
P	33065	25	1										
P	33061	26	1										
P	17027	27	1										
F	27018	28		1									
U	19000 UI 1/	29		1									
P	22009 I 2/	30		1									
		31											
		32											
		33											
		34											
		35											
		36											
		37											
		38											
		39											
		40											

1/ unknown family immature

2/ immature

434

C11.3.6

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco #83 Site Name & Number Sage Grassland (1) SG-A

Collection Date 12 July 75 Species List Ref. No. 83A AS

Sampling Means Aerial Sweep Sorting Means hand

BEK 08/11/75

food habit code	Species Reference Number		Sample Number 1	2	3	4	5	6	7	8	9	10	Total
		1											
		2											
		3											
		4											
		5											
		6											
		7											
		8											
		9											
P	19014	10	6										
		11											
		12											
		13											
		14											
P	33077	15	13										
P	33019	16	5										
	19	17	8										
		18											
H	19123	19	4										
P	19034 I	20	3										
P	17021	21	20										
H	17024	22	1										
H	17024	23	3										
H	17024	24	1										
H	17024	25	8										
H	17024	26	2										
H	17024	27	11										
H	17024 I	28	11										
H	1702- I	29	2										
P	17025	30	1										
O	27061	31	1										
O	27061	32	4										
F	27014	33	1										
F	27014	34	1										
F	27022	35	1										
F	27049	36	2										
F	27048	37	1										
F	27048	38	1										
F	27016	39	1										
P	27029	40	1										

11 immature

435

G5 C11.3.6

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Page 2 of 2

#G-5

Project 83 197 Site Site A Sp.list ref. no. 83AAS Date 7/12/75

| | | |

436

C11.3.6

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LAB ANALYSIS - INVERTEBRATES

(2) Pinyon

Project Name & Number Rio Blanco #83 Site Name & Number South PJ; Site E

Collection Date 12 July 75 Species List Ref. No. 83B AS Pin

Sampling Means Aerial sweep Sorting Means hand

BEK OCT 75

food habit code	Species Reference Number	195 Sample Number 1	2	3	4	5	6	7	8	9	10	Total
	1											
	2											
	3											
P	19034 4	1										
	5											
	6											
	7											
P	19043 8	1										
P	19043 9	9										
H	17024 10	3										
H	18003 11	1										
H	18018 12	1										
F	24000 13	1										
S	04005 14	1										
	12000 15	1										
O	27061 16	3										
F	27014 17	1										
F	27048 18	1										
F	27018 19	5										
F	27018 20	1										
F	27029 21	1										
	22											
	23											
	24											
	25											
	26											
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38											
	39											
	40											

435

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number B.J Site B

Collection Date 12 July 75 Species List Ref. No. 83B AS Jun

Sampling Means Aerial Sweep Sorting Means hand

BEL OCT 75

Species Reference Number	196 Sample Number 1	2	3	4	5	6	7	8	9	10	Total
1											
2											
3											
4											
5											
6											
7											
8											
H 19123 9	1										
P 19043 10	1										
i 19042 11	1										
H 17024 12	2										
17024 I 13	4										
Fi 15003 14	1										
H 33077 15	2										
C 04000 16	7										
U 35000 17	2										
F 24000 U 18	1										
F 27014 19	1										
F 27048 20	2										
i 27022 21	4										
F 27018 22	4										
T 27024 23	2										
P 27029 24	3										
F 27049 25	1										
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
37											
38											
39											
40											

add what code

1) unknown family

438

C11.3.6

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LAB ANALYSIS - INVERTEBRATES

Site C Pinyon (3)

Project Name & Number Rio Blanco 83 Site Name & Number 83C AS (Pinyon) North PJ

Collection Date 12 July 75 Species List Ref. No. 83CAS (Pinyon

Sampling Means Aerial Sweep Sorting Means Hand

BEK OCT 75

food habit code	Species Reference Number	Sample Number 1	2	3	4	5	6	7	8	9	10	Total
	1											
	2											
	3											
H	19110 4		1									
P	19043 5		4									
P	19043 6		1									
P	19084 7		3									
H	17024 8	4	1									
H	17024 I 9	4	3									
H	17024 10	1	1									
H	17037 11	3	3									
H	18018 12	1	2									
H	18018 13	6	5									11
H	18003 14	1	3									
S	12000 15	3	2									
P	33061 16	2	3									
F	25051 17	8	1									
P	27029 18	3	1									
O	27061 19	2	1									
F	27049 20	6	3									
P	27029 21	1	1									
P	27029 22	1	1									
P	27029 23	1	1									
P	27029 24	1	1									
F	27018 25	1	1									
F	27018 26	1	1									
F	27018 27	1	1									
F	27019 28	1	1									
H	16000 2 29	1	2									
F	40001 2 30	1	3									
U	25023 31	1	1									
	32	4										
	33	2										
	34	3										
	35	1										
	36											
	37											
	38											
	39											
	40											

1/ immature
2/ unknown family

439

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site C (3)

Collection Date 12 July Species List Ref. No. 83 CAS (Junip)

Sampling Means Aerial Sweeps Sorting Means hand

BEK OCT 75

food habit code	Species Reference Number	194 Sample Number 1	2	3	4	5	6	7	8	9	10	Total
	1											
	2											
	3											
	4											
	5											
	6											
P	25035 7	1										
F	22014 8	1										
H	19123 9	4										
H	19110 10	2										
P	19043 11	1										
H	17024 12	2										
H	18018 13	1										
H	16000 14	1										
P	32020 15	1										
F	27014 16	1										
F	27016 17	1										
F	27018 18	2										
P	27029 19	1										
P	27029 20	1										
P	27029 21	1										
F	27022 22	1										
F	27022 23	1										
F	27023 24	1										
F	27023 25	1										
	26											
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38											
	39											
	40											

440

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LAB ANALYSIS - INVERTEBRATES

(1)

Project Name & Number Rio Blanco 83 Site Name & Number Greasewood-Sage: A

Collection Date Sept. 75 Species List Ref. No. 83A AS

Sampling Means Aerial Sweep Sorting Means hand

BEK OCT 75

Food habit code	Species Reference Number	389 Sample Number 1	2	3	4	5	6	7	8	9	10	Total
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
P	19054 10	2										
	11											
	12											
	13											
	14											
P	33077 15	2										
P	33079 16	1										
	17											
I+	16000 18	15										
	19											
	20											
	21											
	22											
	23											
	24											
	25											
	26											
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
F	27022 35	1										
I	7047 36	16										
	37											
	38											
	39											
	40											

4411

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Project 82 384 Site (1) Sp.list ref. no. _____ Date _____

1/1		
2		
3		
4		
5		
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7		
8		
9		
50		
1		
2	21	
3		
4		
5	24	
6		
7		
8	42	
9	1	
60	1	
1	1	
2	1	
3	14	
4	5	
5	5	
6	1	
7	1	
8	1	
9	6	
70	2	
1	1	
2		
3		
4		
5		
6		
7		
8		
9		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		

1) unknown - family

442

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site B (2) Pinyon

Collection Date Sept. 75 Species List Ref. No. 83B AS Pin

Sampling Means Aerial Surv. Sorting Means Hand

BEK OCT 75

food habit code	Species Reference Number	Sample Number 1	2	3	4	5	6	7	8	9	10	Total
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
P	19043 9	1										
	10											
	11											
H	18018 12	3										
F	24000 13	1										
	14											
	15											
O	27061 16	1										
	17											
	18											
	19											
	20											
	21											
P	22009 22	1										
H	17024 23	4										
H	17024 24	4										
H	18003 25	2										
H	18003 26	1										
H	18004 27	2										
H	18000 28	1										
S	04005 29	1										
P	33077 30	1										
H	16000 31	1										
H	25031 32	1										
U	25095 33	1										
F	27018 34	2										
F	27018 35	2										
F	27014 36	1										
P	27029 37	1										
U	27045 38	1										
	39											
	40											

1] unknown family

443

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number South PJT B

Collection Date Sept. 75 Species List Ref. No. 83B AS Junip.

Sampling Means Aerial Sweep Sorting Means hand

BEIL OCTS

Species Reference Number	354	Sample Number 2	3	4	5	6	7	8	9	10	Total
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
C 40005 16	2										
17											
18											
19											
20											
21											
22											
23											
24											
25											
F 34031 26	1										
H 18004 27	14										
18003 28	1										
H 18016 29	1										
H 17024 30	5										
H 17024 31	13										
P 33079 32	1										
S 25042 33	1										
F 27022 34	1										
F 27022 35	1										
F 27029 36	1										
P 27029 37	1										
38											
39											
40											

444

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number North PJ Site (3)

Collection Date 8 Sept. 1975 Species List Ref. No. 83C AS (Pin)

Sampling Means Aerial Surf. Pin. Sorting Means hand

BER OCT 75

food habit code	Species Reference Number	351 Sample Number 1	2	3	4	5	6	7	8	9	10	Total
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
H	17024 10	7										
	11											
	12											
	13											
	14											
	15											
P	33061 16	2										
	17											
	18											
	19											
	20											
	21											
	22											
P	27029 23	1										
	24											
	25											
	26											
	27											
	28											
	29											
	30											
	31											
F	24071 32	2										
U	22000 II 33	1										
P	23020 34	1										
H	18003 35	1										
P	19084 36	1										
P	17027 37	1										
U	27045 38	1										
P	27029 39	4										
F	27018 40	7										

1) unknown family immature

440

C11.3.6

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LAB ANALYSIS - INVERTEBRATES

Project Name & Number Rio Blanco 83 Site Name & Number Site C (3)

Collection Date Sept. 75 Species List Ref. No. 83C AS Jump

Sampling Means Aerial Swp Sorting Means hand

	Species Reference Number		Sample Number 352 1	2	3	4	5	6	7	8	9	10	Total
		1											
		2											
P	33079	3	3										
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
P	33020	15	2										
		16											
		17											
		18											
		19											
		20											
		21											
		22											
		23											
		24											
		25											
H	17024	26	54										
H	17024	27	5										
H	18003	28	1										
H	18016	29	1										
H	24031 I	30	1										
P	27029	31	1										
P	27029	32	1										
P	27029	33	1										
P	27029	34	2										
P	27029	35	1										
F	27032	36	1										
		37											
		38											
		39											
		40											

I) immature

446

C.11.3.7

LAB DATA ANALYSIS - MALAISE TRAP SAMPLES

Project Name & No.: Rio Blanco 83 Site Name & No.: Greenwood/Sagebrush #1

Collection Date(s): July 1975 Vegetation Type: 1° sage + Chrysothamnus + grass (Clymn

Sorting Means: Hand Species List Ref. No.: 83A M

Taxonomist & Date Started: BEL 9 Nov

207+247+287

Sample Number

1/455 Enter!

Order Number	Family Number	Species Ref. Number	Subsample Size A[1]	Subsample Size B[2]	A	B	A	B	A	B	A	B	A	B	Total
F 25	045	1	7	28											
		2													
		3													
U 25	095	4	259	1036											
		5													
S 25	042	6	22	88											
U 27	044	7	6	24											
U 25	095	8	21	84											
F 25	033	9	10	40											
		10													
U 25	031	11	1	4											
		12													
		13													
F 25	103	14	4	16											
F 25	103	15	4	16											
		16													
		17													
		18													
F 25	103	19	16	64											
		20													
		21													
		22													
U 25	057	23	7	28											
U 25	057	24	21	84											
		25													
		26													
F 27	003	27	1	4											
F 27	010	28	1	4											
F 27	015	29	1	4											
F 27	015	30	2	8											

1/ Total numbers in subsample

2/ Estimated total in sample

QA Check:

REDOP PROGRESS REPORT

ECI

140 102075 1

2/47

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Project: 83 Site: 1 Sp. List Ref. No.: 83A M Date: July 75

	Order Number	Family Number	Species Ref. Number	207+247+287 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
F	27	015	1	2	8											
			2													
			3													
			4													
F	27	018	35	2	8											
			6													
			7													
			8													
U	25	023	9	4	16											
			40													
			1													
F	25	014	2	45	180											
			3													
F	25	019	4	4	16											
F	25	014	5	53	212											
			6													
F	25	020	7	20	80											
			8													
U	25	023	9	24	96											
F	27	014	50	2	8											
	19	084	1	33	132											
			2													
			3													
			4													
			5													
			6													
			7													
			8													
			9													
			60													
F	27	011	1	38	152											
			2													
F	27	015	3	2	8											
F	27	015	4	22	88											
F	27	015	5	5	20											
F	27	014	6	2	8											
			7													
			8													
F	27	068	9	1	4											
			70													
			1													
			2													
			3													
			4													
			5													
	27	015	6	3	12											
			7													
			8													
			9													
			80													

C.11.3.7 (ECI) ecology consultants, inc.

Project: 83 Site: 1 Sp. List Ref. No.: 83AM Date: July 75

Order Number	Family Number	Species Ref. Number	207+247+287 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
U 19	086	90	33	132											
		1													
		2													
		3													
		4													
F 27	062	5	1	4											
		6													
		7													
		8													
		9													
		100													
F 27	047	1	2	8											
		2													
		3													
U 25	095	4	18	72											
		5													
		6													
		7													
		8													
		9													
P 27	029	110	2	8											
		1													
S 12	001	2	8	32											
		3													
		4													
F 84	0004	5	2	8											
P 19	084	6	2	8											
H 19	123	7	8	32											
U 17	0004	8	29	116											
H 18	018	9	13	52											
H 18	003	120	131	524											
F 27	065	1	7	28											
F 27	065	2	1	4											
F 27	065	3	1	4											
F 27	065	4	1	4											
F 27	065	5	2	8											
F 27	065	6	2	8											
F 27	065	7	6	24											
U 27	0004	8	2	8											
F 27	014	9	3	12											
F 27	014	130	3	12											

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Project: 83 Site: 1 Sp. List Ref. No.: 83A M Date: July 75

	Order Number	Family Number	Species Ref. Number	Subsample Size A	Subsample Size B	A	B	A	B	A	B	A	B	A	B	Total
F	27	014	131	4	16											
F	27	014	2	2	8											
F	27	014	3	8	32											
O	27	061	4	3	12											
O	27	061	5	2	8											
O	27	061	6	18	72											
F	27	015	7	1	4											
F	27	047	8	1	4											
U	28	045	9	1	4											
F	27	026	140	1	4											
F	27	046	1	1	4											
F	27	048	2	1	4											
U	27	052	3	2	8											
F	27	016	4	1	4											
F	27	022	5	2	8											
F	27	022	6	1	4											
F	27	018	7	2	8											
F	27	018	8	1	4											
P	27	029	9	1	4											
U	25	035	150	9	36											
	25	038	1	11	44											
P	25	035	2	2	8											
F	25	038	3	1	4											
F	25	036	4	5	20											
P	25	011	5	1	4											
P	25	040	6	7	28											
P	25	040	7	3	12											
F	25	081	8	1	4											
F	25	081	9	12	48											
F	25	083	160	50	200											
F	25	081	161	10	40											
F	25	081	2	3	12											
F	25	081	3	3	12											
			4													
			5													
			6													
			7													
			8													
			9													
			0													
			1													
			2													
			3													
			4													
			5													
			6													
			7													
			8													
			9													
			0													

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C.11.3.7

LAB DATA ANALYSIS - MALAISE TRAP SAMPLES

Project Name & No.: 83 RIO BLANCO Site Name & No.: #2

Collection Date(s): JULY '75 Vegetation Type: SOUTH SLOPE P-J

Sorting Means: HAND Species List Ref. No.: 83 B m

Taxonomist & Date Started: BEK 11/19/75

Order Number	Family Number	Species Ref. Number	Sample Number 238, 206, 285 — Subsample Size A[1]	B[2] (Enter)	A	B	A	B	A	B	A	B	A	B	Total
		1													
		2													
		3													
F 25	045	4	2	8											
		5													
		6													
		7													
F 25	103	8	1	4											
		9													
		10													
F 25	103	11	2	8											
		12													
		13													
		14													
		15													
		16													
		17													
		18													
M 25	095	19	4	16											
M 25	095	20	6	24											
		21													
F 27	015	22	1	4											
		23													
		24													
		25													
		26													
		27													
		28													
		29													
		30													

1/ Total numbers in subsample

2/ Estimated total in sample

QA Check: _____

[illegible]

ECI

C.11.3.f (ECI)

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roject: 83 Site: # 2 Sp. List Ref. No.: 83 B M Date: July '25

Order Number	Family Number	Species Ref. Number	238, 206, 285 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B.	Total
		1													
		2													
		3													
		4													
		5													
		6													
		7													
25	020	38	1	4											
		9													
		40													
		1													
25	023	42	26	104											
25	014	43	3	12											
25	042	44	1	4											
25	044	45	2	8											
		6													
24	0004	47	42	168											
		8													
		9													
		50													
		1													
		2													
		3													
		4													
		5													
P 22	004	56	1	4											
P 19	084	77	1	4											
		8													
		9													
		60													
		1													
		2													
F 27	014	63	1	4											
		4													
		5													
		6													
		7													
		8													
		9													
		70													
P 19	043	71	1	4											
		2													
		3													
		4													
		5													
		6													
F 24	0004	77	2	8											
F 24	026	78	3	12											
F 07	003	79	1	4											
F 25	10	80	2	8											

C.11.3.f

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Project: 73 Site: # 2 Sp. List Ref. No.: 73 B M Date: Jan 4 '75

Order Number	Family Number	Species Ref. Number	239,206,285 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
25	035	81	2	8											
25	035	82	1	4											
25	038	83	1	4											
25	095	84	1	4											
25	064	85	3	12											
25	056	86	1	4											
25	081	87	3	12											
25	031	88	4	16											
21	055	89	10	40											
27	065	90	1	4											
27	065	91	1	4											
27	004	92	1	4											
		3													
27	014	14	1	4											
27	014	15	1	4											
27	014	16	1	4											
27	014	17	1	4											
15	[illegible]	18	15	60											
17	0000	99	3	12											
19	043	100	2	8											
19	043	101	2	8											
17	0001	102	1	4											
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													

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Page 3 of 3

Project: 83 Site: # 3 Sp. List Ref. No.: 83 C M Date: July '75

Order Number	Family Number	Species Ref. Number	2-4, 205, 246 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
03	061	81	1	4											
03	091	82	3	12											
03	091	83	3	12											
03	091	84	5	20											
23	040	85	1	4											
03	031	X 6	5	20											
		7													
22	020	88	2	8											
19	094	89	3	12											
11	043	90	1	4											
10	104	91	1	4											
		92	1	4											
		93	2	8											
19	094	94	1	4											
21	005	95	1	4											
	010	96	3	12											
24	000	97	1	4											
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													

456.

C.11.3.7

LAB DATA ANALYSIS - MALAISE TRAP SAMPLES

Project Name & No.: Rio Blanco 83 Site Name & No.: Sagebrush · # 4

Collection Date(s): July 75 Vegetation Type: upland sage

Sorting Means: Hand Species List Ref. No.: 83DM

Taxonomist & Date Started: BEL 15 Nov

Order Number	Family Number	Species Ref. Number	203+244+283 Sample Number 1455 Enter Subsample Size A[1]	B[2]	A	B	A	B	A	B	A	B	A	B	Total
		1													
		2													
		3													
F	[illegible]	4	5	32											
		5													
		6													
		7													
		8													
		9													
		10													
		11													
		12													
		13													
F	[illegible]	14	1	4											
F	[illegible]	15	117	468											
		16													
F	[illegible]	17	25	100											
F	[illegible]	18	18	72											
F	[illegible]	19	4	16											
		20													
U	[illegible]	21	40	160											
		22													
		23													
		24													
		25													
		26													
		27													
		28													
		29													
F	[illegible]	30	3	12											

1/ Total numbers in subsample

2/ Estimated total in sample

QA Check: _____

ECI

45

C.11.3.7 (ECI)

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Project: 83 Site: #4 Sp. List Ref. No.: B3DM Date: July 75

Order Number	Family Number	Species Ref. Number	203+244+283 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
		31													
		2													
		3													
F	29	034	34	1	4										
F		035	35	1	4										
F		036	36	2	8										
F		037	37	1	4										
F		038	38	3	12										
F	2	014	39	1	4										
P	19		40	2	8										
P	19	041	41	1	4										
H	15	0001	42	152	608										
U	17	0000	43	20	80										
U	17	0001	44	24	96										
			45												
F	29	062	46	1	4										
F	29	071	47	1	4										
F			48	2	8										
F			49	2	8										
F		010	50	1	4										
			51	1	4										
F		020	52	1	4										
F		023	53	1	4										
F		021	54	1	4										
F	27	015	55	1	4										
F	27	014	56	2	8										
P		029	57	4	16										
F			58	4	16										
F		041	59	1	4										
F			60	1	4										
F			61	4	16										
F			62	2	8										
F	27	014	63	1	4										
F	27	014	64	1	4										
F	27	014	65	1	4										
F	27	055	66	5	20										
F	27	015	67	6	24										
F	27	015	68	9	36										
F	27	015	69	2	8										
F	27	015	70	1	4										
P	27	029	71	5	20										
F	27	048	72	1	4										
F	27	036	73	1	4										
F	27	018	74	1	4										
P	27	029	75	1	4										
F	27	022	76	1	4										
F	27	022	77	1	4										
F	27	022	78	1	4										
P	27	021	79	1	4										
P	27	021	80	1	4										

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C.11.3.7

ECI ecology consultants, inc.

Project: 83 Site: #4 Sp. List Ref. No.: 830M Date: July '25

Order Number	Family Number	Species Ref. Number	203+244+283 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
O 27	061	81	7	28											
P 25	035	82	1	4											
F [illegible]	038	83	1	4											
F 25	038	84	2	8											
F 25	103	85	4	16											
F 25	103	86	1	4											
F 25	103	87	5	20											
U 25	095	88	3	12											
U 25	095	89	6	24											
U 25	095	90	23	92											
U [illegible]	095	91	17	68											
U 25	095	92	8	32											
U 25	044	93	9	36											
U 25	056	94	1	4											
F 25	050	95	2	8											
U [illegible]	064	96	17	68											
F 25	081	97	9	32											
F 25	081	98	19	76											
F 25	081	99	2	8											
F 25	091	100	1	4											
F 25	019	101	3	12											
S 25	042	102	3	12											
P 25	020	103	1	4											
F 25	081	104	1	4											
H 25	031	105	4	16											
F 25	035	106	1	4											
		7													
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													

459

C.11.3.7

LAB DATA ANALYSIS - MALAISE TRAP SAMPLES

Project Name & No.: Rio Blanco 83 Site Name & No.: Mixed Brush #5

Collection Date(s): July 1975 Vegetation Type: Mixed brush

Sorting Means: ——— (HAND) Species List Ref. No.: 835 M

Taxonomist & Date Started: BEIL 5 NOV. 75

	Order Number	Family Number	Species Ref. Number		Sample Number: Combined 204, 245, 284 — 1/4 SS — Enter Subsample Size A	B	A	B	A	B	A	B	A	B	Total
					A[1]	B[2]									
F	25	045		1	3	12									
F	24	000		2	70	280									
				3											
				4											
				5											
				6											
F	27	014		7	3	12									
				8											
				9											
				10											
				11											
				12											
				13											
F	25	014		14	24	96									
F	25	014		15	28	116									
U	25	023		16	10	40									
F	25	020		17	12	48									
				18											
				19											
				20											
				21											
				22											
				23											
P	25	015		24	2	8									
S	25	042		25	12	48									
H	25	031		26	1	4									
U	25	070		27	23	92									
				28											
U	25	095		29	42	168									
U	25	095		30	7	28									

[1] Total numbers in subsample

[2] Estimated total in sample

QA Check: _____

ECI

460

C.11.3.7 (ECI)

ecology consultants, inc.

Project: 83 Site: #5 Sp. List Ref. No.: 835 M Date: July 78

Order Number	Family Number	Species Ref. Number	204+245+284 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
		31													
F 24	000U	2	2	8											
F 24	026	3	1	4											
F 24	010	4	2	8											
U 27	000U	5	3	12											
F 27	071	6	2	8											
F 27	068	7	1	4											
F 27	065	8	2	8											
F 27	006	9	2	8											
F 27	015	40	2	8											
F 27	015	1	2	8											
F 27	015	2	2	8											
F 27	015	3	3	12											
F 27	015	4	7	28											
F 27	015	5	2	8											
F 27	015	6	1	4											
F 27	015	7	1	4											
F 27	015	8	1	4											
F 27	014	9	3	12											
F 27	014	50	4	12											
F 27	014	1	1	4											
F 27	014	2	1	4											
F 27	014	3	5	20											
F 27	065	4	1	4											
F 27	065	5	1	4											
F 27	065	6	1	4											
F 27	065	7	1	4											
F 27	065	8	1	4											
F 27	065	9	1	4											
O 27	061	60	1	4											
O 27	061	1	1	4											
O 27	061	2	1	4											
O 27	061	3	1	4											
O 27	061	4	5	20											
P 27	029	5	5	20											
P 27	029	6	3	12											
P 27	029	7	2	8											
P 27	029	8	3	12											
P 27	029	9	2	8											
F 27	036	70	1	4											
F 27	047	1	1	4											
P 27	029	2	2	8											
P 27	029	3	4	16											
F 25	002	4	1	4											
P 25	035	5	1	4											
P 25	035	6	1	4											
P 25	035	7	3	12											
H 25	031	8	1	4											
F 25	028	9	2	8											
F 25	103	80	1	4											

REDUCED PROGRESS REPORT

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C.11.3.7 (ECI)

ecology consultants, inc.

Project: 83 Site: #5 Sp. List Ref. No.: 83SM Date: July 75

Order Number	Family Number	Species Ref. Number	204+245+284 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
F 25	103	81	4	16											
F 25	103	2	10	40											
S 25	101	3	1	4											
U 25	095	4	3	12											
U 25	095	5	5	20											
U 25	044	6	6	24											
S 25	061	7	23	92											
U 25	056	8	2	8											
U 25	023	9	4	16											
F 25	019	90	5	20											
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		100													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		110													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		120													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		130													

RECOR

46

C.11.3.7

LAB DATA ANALYSIS - MALAISE TRAP SAMPLES

Project Name & No.: Rio Blanco #83 Site Name & No.: Greasewood/Sage #1

Collection Date(s): Sept. 75 Vegetation Type: Greasewood/sage

Sorting Means: Hand Species List Ref. No.: 83AM

Taxonomist & Date Started: BEK 13 Nov 75

	Order Number	Family Number	Species Ref. Number	Sample Number 402 + 443												Total
				Enter V4 SS		Subsample Size										
				A[1]	B[2]	A	B	A	B	A	B	A	B	A	B	
F	25	045	1	2	8											
			2													
S	25	101	3	1	4											
U	25	095	4	11	44											
F	25	081	5	3	12											
S	25	042	6	5	20											
U	25	044	7	7	28											
U	25	095	8	14	56											
F	25	081	9	13	52											
			10													
			11													
			12													
			13													
			14													
F	25	103	15	1	4											
F	25	045	16	2	8											
			17													
F	25	103	18	1	4											
			19													
			20													
			21													
			22													
			23													
U	25	064	24	3	12											
F	25	081	25	6	24											
			26													
F	27	068	27	1	4											
F	27	068	28	1	4											
			29													
F	27	015	30	1	4											

[1] Total numbers in subsample

[2] Estimated total in sample

QA Check: _____

ECI

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C.11.3.7 (ECI)

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Page 2 of 4

Project: 83 Site: #1 Sp. List Ref. No.: 83AM Date: Sept 75

Order Number	Family Number	Species Ref. Number	442 + 443 V455 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
		31													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
P 25	004	40	1	4											
U 25	023	1	12	48											
F 25	014	2	3	12											
		3													
		4													
F 25	014	5	6	24											
		6													
F 25	020	7	4	16											
		8													
		9													
		50													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		60													
F 24	000a	1	41	164											
		2													
F 27	015	3	1	4											
F 27	015	4	9	36											
		5													
		6													
		7													
		8													
		9													
		70													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		80													

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C.11.3.7 (ECI)

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Page 3 of 4

Project: 83 Site: #1 Sp. List Ref. No.: 83AM Date: Sept 75

Order Number	Family Number	Species Ref. Number	402 + 443 1/455 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
S	25	042	01	1	4										
			2												
			3												
			4												
			5												
			6												
			7												
			8												
			9												
			90												
			1												
			2												
			3												
			4												
			5												
			6												
			7												
			8												
F	27	015	9	4	16										
			100												
			1												
			2												
			3												
U	25	095	4	45	180										
			5												
			6												
			7												
			8												
			9												
			110												
			1												
			2												
			3												
			4												
			5												
			6												
			7												
U	17	0004	8	9	36										
U	18	018	9	2	8										
U	18	003	120	19	76										
			1												
F	27	065	2	1	4										
			3												
			4												
			5												
			6												
F	27	065	7	1	4										
			8												
F	27	014	9	3	12										
			130												

C.11.3.7 (ECI)

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Project: 83 Site: #1 Sp. List Ref. No.: 83A M Date: Sept 75

	Order Number	Family Number	Species Ref. Number	402 & 403 1/4 ss Sub-Sample Size A	B	A	B	A	B	Total A	B	A	B	A	B
			131												
F	27	044	2	2	8										
			3												
			4												
O	27	061	5	1	4										
O	27	061	6	4	16										
			7												
			8												
			9												
			140												
			1												
			2												
			3												
			4												
F	27	022	5	4	16										
			6												
F	27	018	7	1	4										
			8												
			9												
U	25	095	150	2	8										
			1												
			2												
			3												
			4												
			5												
			6												
P	25	040	7	1	4										
			8												
F	25	081	9	2	8										
F	25	081	160	7	28										
F	25	083	1	5	20										
			2												
			3												
S	19	108	4	2	8										
H	01	003	5	1	4										
O	27	061	6	1	4										
O	27	061	7	54	216										
F	27	066	8	1	4										
F	27	066	9	1	4										
F	27	015	170	1	4										
F	27	015	1	3	12										
F	27	015	2	1	4										
F	27	014	3	4	16										
F	27	014	4	3	12										
F	27	014	5	1	4										
F	27	049	6	1	4										
F	27	037	7	1	4										
F	27	026	8	1	4										
P	27	029	9	1	4										
P	25	040	180	2	8										

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C.11.3.7 (ECI)

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Project: 83 Site: #1 Sp. List Ref. No.: 83AM Date: Sept 75

Order Number	Family Number	Species Ref. Number	Subsample Size A	B	A	B	A	B	A	B	A	B	A	B.	Total
F 25	081	181	2	.8											
H 25	051	2	11	44											
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		190													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		200													
		1													
		2													
		3													
		4													
		5		1416											
		6													
		7													
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		0													

467

C.11.3.7

LAB DATA ANALYSIS - MALAISE TRAP SAMPLES

Project Name & No.: Rio Blanco 83 Site Name & No.: South P-5 #2

Collection Date(s): Sept 75 Vegetation Type: pinyon-juniper

Sorting Means: Hand Species List Ref. No.: 83BM

Taxonomist & Date Started: BEK 19 Nov 75

Order Number	Family Number	Species Ref. Number	Sample Number												Total
			Subsample Size												
			A[1]	B[2]	A	B	A	B	A	B	A	B	A	B	
		1													
P 25	035	2	1	4											
		3													
		4													
		5													
		6													
F 25	103	7	1	4											
		8													
		9													
		10													
		11													
C 25	095	12	17	68											
		13													
		14													
		15													
		16													
		17													
		18													
		19													
U 25	095	20	7	28											
		21													
		22													
		23													
		24													
		25													
F 25	015	26	1	4											
		27													
		28													
		29													
		30													

[1] Total numbers in subsample

[2] Estimated total in sample

QA Check: _____

ECI

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C.11.3.7 (ECI)

ecology consultants, inc.

Project: 83 Site: 2 Sp. List Ref. No.: 83BM Date: Sept 75

Order Number	Family Number	Species Ref. Number	Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
		31													
		2													
		3													
		4													
		5													
		6													
		7													
25	020	38	1	4											
		9													
		40													
		1													
		2													
25	014	43	2	8											
25	043	44	3	12											
25	041	45	3	12											
		6													
24	[illegible]4	47	16	64											
		8													
		9													
		50													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		60													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		70													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		80													

C.11.3.7

ECI ecology consultants, Inc.

Project: 83 Site: 2 Sp. List Ref. No.: 83BM Date: Sept 75

	Order Number	Family Number	Species Ref. Number	Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
P	25	035	81	1	4											
			2													
			3													
			4													
			5													
			6													
			7													
			8													
F	27	055	89	1	4											
			90													
			1													
			2													
S	19	108	3	12	48											
			4													
			5													
			6													
			7													
F	18	0004	98	19	76											
L	17	0004	99	6	24											
			100													
			1													
P	19	034	102	1	4											
F	27	034	103	1	4											
F	25	103	104	3	12											
P	25	015	105	1	4											
F	25	081	106	3	12											
F	25	081	107	1	4											
F	27	071	108	2	8											
F	27	014	109	2	8											
P	27	029	110	1	4											
			1													
			2													
			3													
			4													
			5													
			6													
			7													
			8													
			9													
			120													
			1													
			2													
			3													
			4													
			5													
			6													
			7													
			8													
			9													
			0													

470

C.11.3.7

LAB DATA ANALYSIS - MALAISE TRAP SAMPLES

Project Name & No.: 83 RIO BLANCO Site Name & No.: #3

Collection Date(s): SEPT. '75 Vegetation Type: NORTH SLOPE PJ

Sorting Means: HAND Species List Ref. No.: 83 CM

Taxonomist & Date Started: BEIS - 11/19/75

Order Number	Family Number	Species Ref. Number	Sample Number 445+404 (Enter)												Total
			Subsample Size												
			A 1/	B 2/	A	B	A	B	A	B	A	B	A	B	
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		10													
		11													
		12													
		13													
		14													
		15													
		16													
		17													
		18													
		19													
		20													
		21													
		22													
F	0004	23	11	44											
		24													
		25													
		26													
		27													
		28													
F	0141	29	1	4											
F	0110	30	2	8											

1/ Total numbers in subsample

2/ Estimated total in sample

QA Check: _____

ECI

C.11.3.7

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Project: 83 Site: # 3 Sp. List Ref. No.: 83 CM Date: SEPT. '75

Order Number	Family Number	Species Ref. Number	445+404 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
F 25	020	31	2	8											
U 25	023	32	14	56											
		3													
S 25	042	34	2	8											
		5													
F 25	091	36	1	4											
		7													
F 27	065	48	1	4											
		9													
		40													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		50													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
F 27	063	58	1	4											
		9													
		60													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		70													
F			71	2	8										
U			72	2	8										
F			3	2	8										
U			4	18	72										
			5	2	8										
			6												
			7												
			8												
			9												
			80												

472

C.11.3.7

ECI ecology consultants, inc.

Project: 83 Site: # 3 Sp. List Ref. No.: 83 CM Date: SEPT. '83

Order Number	Family Number	Species Ref. Number	445+404 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
		81													
		2													
		3													
		4													
P 25	040	85	1	4											
		6													
P 25	040	87	1	4											
		8													
		9													
		90													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
SP 10	1	98	2	8											
P	035	99	1	4											
PF 25	045	100	1	4											
F 25	123	101	1	4											
F		102	2	8											
F		103	1	4											
F# 25	031	104	2	8											
F	051	105	2	8											
F	071	106	2	8											
F	074	107	1	4											
P 22	001	108	1	4											
U	001	109	3	12											
H 16	000 4	110	21	84											
F	065	111	1	4											
F 21	015	112	1	4											
F 27	015	113	1	4											
F	011	114	1	4											
F	111	115	2	8											
F	111	116	2	8											
F 27	111	117	1	4											
F 7	002	118	1	4											
P	111	119	1	4											
P		120	1	4											
P		121	1	4											
F 27	004	122	1	4											
FD		123	1	4											
F 11	012	124	1	4											
		5													
		6													
		7													
		8													
		9													
		0													

4773

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LAB DATA ANALYSIS - MALAISE TRAP SAMPLES

Project Name & No.: 83 RIO BLANCO Site Name & No.: SAGEBRUSH #4

Collection Date(s): SEPT. '75 Vegetation Type: UPLAND SAGE

Sorting Means: HAND Species List Ref. No.: 83D M

Taxonomist & Date Started: BEK 18 NOV

Order Number	Family Number	Species Ref. Number	Sample Number 405+446 (enter) Subsample Size A[1]	B[2]	A	B	A	B	A	B	A	B	A	B	Total
		1													
F 25	103	2	2	8											
		3													
F 27	015	4	1	4											
		5													
		6													
		7													
		8													
		9													
		10													
		11													
		12													
		13													
F 24	000 U	14	4	16											
F 4	000 U	15	28	112											
		16													
F 25	014	17	3	12											
F 25	014	18	3	12											
F [illegible]	210	19	4	16											
		20													
U 25	023	21	15	60											
		22													
		23													
		24													
		25													
		26													
		27													
		28													
		29													
		30													

1/ Total numbers in subsample

2/ Estimated total in sample

QA Check: _____

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Project: 83 Site: # 4 Sp. List Ref. No.: 83 DM Date: SEPT. '8-

Order Number	Family Number	Species Ref. Number	405+416 Subsample Size A/4	B	A	B	A	B	A	B	A	B	A	B	Total
F	27	015	31	1	.4										
			2												
			3												
			4												
			5												
			6												
			7												
			8												
			9												
			40												
			1												
H	16	004	42	29	116										
H	17	004	43	9	36										
			4												
			5												
			6												
			7												
			8												
			9												
			50												
			1												
			2												
			3												
			4												
			5												
			6												
			7												
F	27	014	58	2	8										
			9												
F	27	014	60	1	4										
			1												
			2												
			3												
			4												
			5												
			6												
			7												
			8												
			9												
F	27	015	70	1	4										
P	27	009	71	1	4										
			2												
			3												
F	27	018	74	1	4										
			5												
			6												
			7												
			8												
O	11	061	79	5	20										
			80												

475

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Page 3 of 3

Project: 83 Site: # 4 Sp. List Ref. No.: 83DM Date: SEPT. '83

Order Number	Family Number	Species Ref. Number	405+446 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
		1													
		2													
		3													
		4													
		5													
F	25	103	86	4	16										
F	25	103	87	2	8										
			8												
U	25	095	89	39	156										
U		095	90	8	32										
U	25	045	91	24	96										
			2												
U	25	044	93	2	8										
			4												
			5												
			6												
			7												
F	25	091	98	2	8										
			9												
			100												
F			101												
			2												
			3												
F	25	091	104	6	24										
			5												
			6												
F	25		107	1	4										
F	25	039	108	1	4										
F	25	038	109	1	4										
F	25	045	110	1	4										
F	25	081	111	7	28										
P	25	015	112	1	4										
H	25	031	113	3	12										
S	14	108	114	2	8										
P	10	083	115	1	4										
O	27	041	116	2	8										
P		091	117	6	24										
F	27		118	1	4										
F	27	015	119	1	4										
O	27	041	120	2	8										
U	27	054	121	1	4										
P	27	089	122	1	4										
F	27	014	123	2	8										
F	25	081	124	1	4										
F	27	041	125	2	8										
	1	082	126	4	16										
P		029	127	1	4										
P	7	029	128	1	4										
F	27	041	129	1	4										
F	23	082	130	1	4										

2976

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LAB DATA ANALYSIS - MALAISE TRAP SAMPLES

Project Name & No.: Rio Blanco #83 Site Name & No.: Mixed brush #5

Collection Date(s): Sept 1975 Vegetation Type: Mixed brush

Sorting Means: Hand Species List Ref. No.: 835 M

Taxonomist & Date Started: BEL 7 Nov 75

	Order Number	Family Number	Species Ref. Number	406+447 Sample Number 1/455 Enter Subsample Size A[1]	B[2]	A	B	A	B	A	B	A	B	A	B	Total
			1													
F	24	000 u	2	26	104											
			3													
			4													
			5													
			6													
			7													
F	27	014	8	3	12											
			9													
			10													
			11													
			12													
			13													
F	25	014	14	7	28											
F	25	014	15	19	76											
u	25	023	16	14	56											
F	25	020	17	3	12											
			18													
			19													
			20													
			21													
			22													
			23													
P	25	015	24	2	8											
S	25	042	25	7	28											
H	25	031	26	1	4											
u	25	070	27	6	24											
			28													
u	25	095	29	8	32											
u	25	095	30	21	84											

1/ Total numbers in subsample

2/ Estimated total in sample

QA Check: _____

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Project: 83 Site: #5 Sp. List Ref. No.: 835 M Date: Sept 75

406+447

Order Number	Family Number	Species Ref. Number	Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		40													
		1													
		2													
		3													
F	27 015	4	2	8											
		5													
		6													
		7													
		8													
		9													
		50													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
o	27 061	60	6	24											
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
		70													
		1													
		2													
		3													
		4													
		5													
		6													
		7													
		8													
		9													
F	2? 103	80	1	4											

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Project: 83 Site: #8 Sp. List Ref. No.: 836M Date: Sept 78

	Order Number	Family Number	Species Ref. Number	406+407 Subsample Size A	B	A	B	A	B	A	B	A	B	A	B	Total
F	25	103	81	2	8											
F	25	103	2	2	8											
			3													
			4													
U	25	095	5	22	88											
			6													
			7													
U	25	056	8	2	8											
			9													
F	25	019	90	1	4											
S	19	108	1	2	8											
F	24	000 U	2	3	12											
F	27	015	3	2	8											
F	27	015	4	1	4											
F	27	015	5	1	4											
F	27	014	6	8	32											
F	27	014	7	2	8											
F	27	014	8	2	8											
F	27	014	9	2	8											
O	27	061	100	2	8											
F	27	057	1	1	4											
P	27	029	2	1	4											
F	27	022	3	2	8											
F	27	068	4	1	4											
F	27	058	5	1	4											
U	25	045	6	1	4											
P	25	035	7	3	12											
P	25	035	8	2	8											
F	25	103	9	5	20											
F	25	081	110	10	40											
F	25	081	1	6	24											
U	25	017	2	1	4											
			3													
			4													
			5													
			6													
			7													
			8													
			9													
			120													
			1													
			2													
			3													
			4													
			5													
			6													
			7													
			8													
			9													
			130													

2.3.10 DOMESTIC LIVESTOCK

2.3.10.1 Introduction - No changes have been implemented since Progress Report-4. See section 2.3.10.1 in Progress Report-4 for the objectives of the domestic livestock study.

2.3.10.2 Methods - No changes have been implemented since Progress Report-4. See section 2.3.10.2 in Progress Report-4 for the methods used in the domestic livestock study.

2.3.10.3 Results - Aerial surveys were conducted on November 6 and 24, 1975. During the first survey, 500 cattle were observed. Large numbers of cattle were observed on 84 Mesa, Duck Creek, Ryan Gulch and Wagon Road Ridge. The cattle were scattered in small groups throughout the study area. Slight distribution change was noted on the November 24 survey. Cattle were more frequently observed in the bottom of Ryan Gulch, Yellow Creek, Corral Gulch, and Duck Creek than on the associated ridges and mesas where they were observed during the previous survey. Five hundred eighty-four cattle were observed during the second survey in November, 1975.

2.3.10.4 Summary and Conclusions - Large numbers of cattle were observed during aerial surveys conducted this quarter. Most cattle were observed northeast and southeast of Tract C-a.

2.3.10.5

Raw Data for
Domestic Livestock

2.3.11 REMOTE SENSING

2.3.11.1 Introduction - No changes have been implemented since Progress Report-4. See section 2.3.11.1 for the objectives of the remote sensing study.

2.3.11.2 Methods - No changes have been implemented since Progress Report-4. See section 2.3.11.2 for remote sensing methods.

2.3.11.3 Results - One flight to obtain color infrared (CIR) imagery at a scale of 1:6000 was conducted in September, 1975. Coverage at the 1:6000 scale provided imagery of the entire 400 Km^2 (170 sq. mi.) study area.

2.3.11.4 Summary and Conclusions - The imagery of the entire 400 Km^2 (170 sq. mi.) study area has been arranged in flight lines for analysis.

2.3.12 THREATENED AND ENDANGERED SPECIES

2.3.12.1 Introduction - No changes have been implemented since Progress Report-4. See section 2.3.12.1 in Progress Report-4 for the objectives of the threatened and endangered species studies.

2.3.12.2 Methods

2.3.12.2.1 General Investigations - No changes have been implemented since Progress Report-4. See section 2.3.12.2.1 for methods used in investigations of threatened and endangered species.

2.3.12.2.2 Greater Sandhill Crane Studies - Between April 17 and 30, 1975, up to 30 greater sandhill cranes were observed displaying and foraging on 84 Mesa northeast of oil shale Tract C-a. Any population of greater sandhill cranes that nests within Colorado has been designated as "endangered" by the Colorado Division of Wildlife/Colorado Wildlife Commission. Thus, an ongoing study to determine the status of greater sandhill cranes that frequent 84 Mesa and surrounding environs was initiated. During the reporting quarter, a ground survey was conducted to determine whether the cranes utilized these areas during their fall southward migration.

The survey area, located on 84 Mesa was restricted to those portions of the mesa dominated by sagebrush (Artemisia tridentata). The topography of this xeric mesa varies from flat to slightly rolling.

The area was ground-surveyed four times. The initial survey, on horseback, commenced September 4, 1975; the remaining surveys occurred September 13-14, 1975, on horseback and foot; September 19-20, 1975, on foot; and September 30, 1975, on horseback and vehicle. Transects were spaced at intervals that would insure complete coverage of the area. The transect interval was reduced in the area where greater sandhill cranes were observed during April, 1975. The area was thoroughly scanned with 7 x 26 binoculars and/or a 20x spotting scope.

On October 8, 1975, a flock of greater sandhill cranes was observed by ECI personnel near the confluence of Piceance Creek and Ryan Gulch. Following that observation, a thorough ground survey of 84 Mesa and Piceance Creek was conducted by vehicle. Residents were interviewed to determine whether they had observed any cranes in the area. An aerial survey was conducted on October 9, 1975, and covered the following areas: 1) Piceance Creek valley from Rio Blanco to the White River; 2) Tract C-a; 3) 84 Mesa and nearby gulches; 4) Yellow Creek to the White River. The survey was flown at an altitude of 46m (150 ft) above ground level and at an indicated air speed of 121-129 Km per hour (75-80 mph). An additional aerial survey was conducted on October 22, 1975, and covered the same areas of the October 9, 1975 survey. The survey was flown at an altitude of 61 m (200 ft) above ground level because of turbulence.

On November 4, 1975, ECI was notified that two flocks of greater sandhill cranes had been observed on 84 Mesa on October 25, 1975. Following that observation, a ground survey of 84 Mesa, Duck Creek and Yellow Creek was conducted November 4 and 5, 1975, by Limnetics' biologists. During the regular mule deer and raptor census flight of November 6, 1975, time was taken to survey 84 Mesa and environs for greater sandhill cranes.

2.3.12.3 Results

2.3.12.3.1 General Investigations - One animal species, the prairie falcon (Falco mexicanus), recently removed from the threatened species list was observed during the reporting quarter in November, flying approximately 1.6 Km (1 mi) south of Reagle Ranch.

2.3.12.3.2 Greater Sandhill Crane Studies - Greater sandhill cranes were not observed during the ground surveys conducted in September. On October 8, 1975, a flock consisting of 13 adult and 7 juvenile cranes was observed flying 0.8 Km (0.5 mi) east of the confluence of Ryan Gulch and Piceance Creek. Conversations with local ranchers and Tract C-b personnel revealed that a flock of 19-20 greater sandhill cranes was observed on the Weidland Ranch on Piceance Creek several days prior to ECI's October 8th observation. The cranes observed by

personnel from Oil Shale Tract C-b and local ranchers may have been the same flock which ECI personnel observed foraging along Piceance Creek on October 8, 1975. All observations occurred in the same general area within a few days of each other, and approximately the same numbers of cranes were observed by ECI personnel, local ranchers and Tract C-b personnel.

The aerial survey on October 9, 1975, revealed one greater sandhill crane standing in the Piceance Creek bottom approximately 6.8 km (4.25 mi) north of the confluence of Piceance Creek and Ryan Gulch.

The aerial survey on October 22, 1975, was scheduled to coincide with the peak of migration (V. Salt, Bureau of Sport Fisheries and Wildlife, personal communication, 1975). Greater sandhill cranes were not observed during this survey. Solitary cranes, if present, were not detectable because turbulence and high velocity winds prohibited flying at a low altitude. On October 25, 1975, two flocks of greater sandhill cranes were observed on 84 Mesa by Dr. Alan Olson, the archaeological contractor for Rio Blanco Oil Shale Project. The flocks, consisting of five and six greater sandhill cranes, were observed approximately 1.6 km (1 mi) northwest of 84 Ranch. However, during the surveys conducted by Limnetics personnel on November 4-6, no sandhill cranes were observed.

2.3.12.4 Summary and Conclusions

2.3.12.4.1 General Investigations - One prairie falcon was observed during the reporting quarter. However, the high mobility of this species and the limited number of observations preclude the designation of habitat preference.

2.3.12.4.2 Greater Sandhill Crane Studies - The possible use of 84 Mesa as a fall staging area was investigated during September and October, 1975. Two flocks of greater sandhill cranes were observed on 84 Mesa on October 25, 1975.

Greater sandhill cranes usually remain for 2-7 weeks at a fall staging area prior to their southward migration (Drewien and Bizeau, 1974). However, surveys of 84 Mesa that occurred on October 22 and November 4-6, 1975, during

the peak of migrating, did not reveal greater sandhill cranes. Thus, the two flocks observed probably utilized 84 Mesa as a temporary resting and foraging area during their southward migration.

The status of the flock observed October 8, 1975, near the confluence of Piceance Creek and Ryan Gulch is unknown. Some cranes migrating southward from northern staging areas will occasionally stop at staging areas further south (Drewien and Bizeau, 1974). Greater sandhill cranes generally require available grain in proximity to an adequate water supply for their fall staging area (Drewien and Bizeau, 1974), but 84 Mesa does not seem to meet these criteria. In the fall, greater sandhill cranes generally move to the major staging area nearest their summer nesting site. Reports from several residents in the White River and Piceance Creek concerning occasional sightings of cranes during past migration periods suggest that portions of the Piceance Creek valley may serve as foraging sites for transient cranes. Thus, the flock observed on October 8, 1975, could have been either foraging and/or staging along Piceance Creek.

2.3.13 Range Analysis

2.3.13 RANGE ANALYSIS

2.3.13.1 Introduction - Range, browse, and soil condition and trend are the principal criteria influencing grazing management decisions on federally administered lands. Such field studies have not been undertaken in the area of Tract C-a since a 1941 Bureau of Land Management range analysis.

This program, therefore, was primarily designed to determine the range condition (the current condition of the range in relation to the potential of which the site is capable) of all circumscribed plant communities that have been mapped for Tract C-a and adjacent areas. Trend, the inclination of range condition toward improvement, stabilization, or deterioration, was also determined. Concurrently, browse and soil conditions and trend were evaluated.

Since similar methodologies have been used, the condition and trend studies presented herein relate to and integrate with separate studies conducted by state and federal agencies. Data obtained during these studies permit practical evaluations affecting land management decisions.

2.3.13.2 Methods

2.3.13.2.1 Data Collection - The procedures used to establish vegetation condition and trend were consistent with common range analysis practices as described in detail in United States Department of Agriculture Forest Handbook 2209.21R3 (Range Environmental Analysis Handbook, 1970). Maps on which vegetation types weredelineated by remote sensing techniques were used to locate field sampling locations. Each circumscribed type was ground-checked and the dominant vegetation verified.

Each delineated vegetation type estimated to be greater than 16 ha (40 A) but smaller than one-half section (128 ha) in size was sampled by means of one paced transect. In larger types, transects were placed at an approximate

rate of one per one-half section longitudinal to and centered within the shape of the type. A total of 137 transects, each 400 paces in length, were established. Sampling points along a transect were located at 4-step intervals for grass-forb data collection (100 sampling points) and at 16-step intervals for browse data collection (25 sampling points).

At each grass-forb sample point, a loop 1.91 cm (0.75 in.) in diameter was placed at a mark on the toe of a boot and hits on rock, litter, bare soil, and vegetation were recorded on a standard field data form (Figure 2.3-13). Hits on vegetation were recorded by individual plant species. When the loop did not hit a perennial plant, the nearest plant within a 180° arc of the loop was tallied. Each plant, depending on its response to grazing or disturbance, was ecologically classified as a decreaser (desirable), increaser (intermediate), or invader (undesirable). These designations were checked and verified by Dr. Phil Sims of the Range Science Department, Colorado State University; Dr. Robert Hyde, a Colorado State University Range Extension specialist; and Mr. Tom K. Eamon, a Range Conservationist with the Denver Office of the Soil Conservation Service.

Plant vigor and current soil erosion, factors used in the range analysis, were visually evaluated and recorded (Figure 2.3-13). Vigor ratings were made only on available decreaser and increaser species and scored on a 0-10 scale.

The score was based on leaf length, number of seedstalks, and root system, which was correlated in size or extent to above-ground plant parts (Table 2.3-321). Current soil erosion was scored from 0 to 50 by the criteria listed in Table 2.3-322. Vegetation and soil trends at each study site were also determined visually, based on guides presented in Table 2.3-323.

At each browse sampling point, the nearest browse plant within a 180° arc of the loop was given an age and form class designation. These designations, based on criteria presented in Table 2.3-324 (Patton and Hall, 1966), were also recorded on the standard field data form (Figure 2.3-13).

File No._____

Sheet_____ of_____

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No._____ Vegetation Type_____

Location: T_____ R_____ S_____ 1/4 1/4 S_____ Date_____

Slope_____ Aspect_____ Elevation_____

Field Analyst(s)_____ Pace Interval_____

QA Check_____

CONDITION AND TREND RATING

Vegetation

Vigor_____

Current Trend_____

Soil Stability

Current Erosion_____

Current Trend_____

COMPOSITION

Classification	Species	Hits	Tally	Total
	Litter			
	Rock			
	Bare Ground			

BROWSE CONDITION

Species	Age Class				Form Class						
	Young	Mature	Decadent	Dead	1	2	3	4	5	6	Unavailable

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Figure 2.3-13 Data sheet for range and browse condition-paced transect for RBOSP.

Table 2.3-321 Criteria for rating vigor for key grass species observed on range analysis paced transects for RBOSP

1. Tall Grasses

   a. Leafy with long (8 inches or longer) leaves, and numerous seed stalks per plant (50 or more for sideoats) 9-10

   b. Plants less leafy and with fewer seed stalks (10 to 50 for sideoats) leaves 6 inches or longer 5-8

   c. Leaves 4 to 6 inches, few seed stalks (3 to 10 for sideoats)..... 2-4

   d. Plants weak, partly dead, or pull up easily; leaves short (4 inches or less) and seed stalks absent or 1 per plant 0-1

2. Mid Grasses

   a. Leafy with long (7 inches or longer) leaves and produce abundant seed; blue grama will have many seed stalks with three or more spikes 9-10

   b. Plants less leafy, leaves 5 inches or longer; the majority of blue grama seed stalks will have 2 spikes 5-8

   c. Plants with fewer leaves; blue grama seed stalks usually will have one and not more than 2 spikes 2-4

   d. Plants weak, pull up easily, leaves short (3 inches or less), seed stalks few or none; blue grama seed stalks will have only a single spike 1 inch or less in length 0-1

Table 2.3-322 Criteria for rating current soil erosion on range analysis paced transects for RBOSP

a. Plant cover and litter. Well distributed; effective in protecting the soil ..... (50-41)

(1) Bare Spaces. Small and well dispersed; not contiguous or coalescing.

(2) Erosion Pavement. Not present.

(3) Soil Movement. Practically none; no active rills or gullies; areas eroded in the past, if evident, completely stabilized and healed.

(4) Soil Deposition. If present, not of local origin.

(5) Pedestaling. Not present

(6) Trampling. No current trampling displacement evident; old terraces due to trampling, if present are completely stabilized.

b. Plant Cover and Litter. Well distributed; appears effective in protecting the soil, litter dams uncommon ..... (40-31)

(1) Bare Spaces. Small, well dispersed, occasionally coalescing.

(2) Erosion Pavement. Little or none.

(3) Soil Movement. Slight and patchy, no gullies; rills, if present, few and isolated. Areas eroded in the past, if evident, mostly stabilized and healed.

(4) Soil Deposition. Slight, mostly not of local origin.

(5) Pedestaling. Little, close to bare spaces.

(6) Trampling. Little current trampling displacement; stabilized.

c. Plant Cover and Litter. Thin or discontinuous and not well distributed; litter dams evident ..... (30-21)

(1) Bare Spaces. Often coalescing but with no continuous runoff pattern, large spaces less common than small ones.

(2) Soil Movement. Discernible on less than half of the area; may be accelerated in spots and stable elsewhere; occasional rills; few active gullies; may be evidence of wind scouring.

(3) Soil Deposition. Occasional small alluvial deposits present; wind deposits may be evident as small dunes.

(4) Pedestaling. Common

(5) Trampling. Current trampling displacement may be common either in form of trailing or general displacement.

d. Plant Cover and Litter. Sparse, patchy, and definitely not effective in preventing soil movement; litter dams may or may not be present..(20-11)

(1) Bare Spaces. Frequent, commonly coalesced with a definite runoff pattern; large bare spaces common; subsoils may be evident in small areas.

(2) Erosion Pavement. Well developed in most bare spaces.

(3) Soil Movement. Prominent; active rills and gullies common; small blowouts common in windy areas.

(4) Soil Deposition. Conspicuous alluvial deposits common; wind deposits may be prominent in small dunes; plant root crowns and stems partly buried.

(5) Pedestaling. Majority of plants pedestaled.

(6) Trampling. Current trampling displacement widespread and generally distributed.

e. Plant Cover and Litter. Plants and litter isolated with very limited effect on control of soil movement ..... (10-0)

(1) Bare Spaces. Generally large with prominent runoff pattern; subsoils exposed generally over the area.

(2) Erosion Pavement. Continuous on stony or gravelly soils.

(3) Soil Movement. Severe with extensive rilling and gullying, in windy areas, blowouts are large and common.

(4) Soil Deposition. Large dunes common on light soils; plant root crowns and stems deeply buried, drainage channels choked with alluvial deposits.

(5) Pedestaling. Nearly all plants pedestaled.

(6) Trampling. Current trampling displacement widespread and excessive.

Table 2.3-323 Criteria for determining vegetation and soil trends on range analysis paced transects for RBOSP

a. Indicators of Upward Vegetation Trend

(1) Desirable and intermediate forage plants becoming more abundant.

(2) Desirable and intermediate forage plants invading bare ground or stands of undesirable plants. A variety of all age classes of better forage plants must be present.

(3) Establishment of perennial plants on erosion pavement.

(4) Several years of vigorous growth on browse.

(5) Decreaser plants increasing and vigorous. Grasses with long, green leaves, and numerous healthy seed stalks.

(6) A well dispersed accumulation of litter.

b. Indicators of Downward Vegetation Trend

(1) Desirable and intermediate species decreasing in vigor.

(2) Lack of young plants from desirable and intermediate species.

(3) Invasion by undesirable species.

(4) Hedged and highlined shrubs. Dead branches generally indicating that shrubs are dying back.

(5) Litter scarce and poorly dispersed.

c. Indicators of Upward Soil Trend

(1) Gullies approaching the angle of repose and healing.

(2) Gullies stabilizing by the growth of perennial vegetation on both sides and bottom.

(3) Soil remnants having sloping sides or sides covered with mosses, lichens, or higher plants.

(4) Terraces characterized by sloping sides which are being covered with vegetation. Tops of terraces should be occupied by perennial plants.

d. Indicators of Downward Soil Trend

(1) Rill marks. Rill marks are small, active gullies frequently of the shoestring type.

(2) Active gullies. Established gullies are raw and actively cutting. This type of gully may vary from a few inches to several feet in depth.

(3) Alluvial deposits. Soil material transported and laid down by running water.

(4) Soil remnants. Original topsoil held in place by vegetation or plant roots.

(5) Active terraces. Terraces usually caused by hooves of animals. They are "stairstep like" in appearance on slopes.

(6) Exposed plant crowns or roots (pedestalled plants).

(7) Wind-scoured depressions between plants.

(8) Wind deposits.

Table 2.3-324 Criteria for determining age and form class of browse species on range analysis paced transects for RBOSP

BROWSE AGE AND FORM CLASS

Age Class	Form Class
S - Seedling	1. All available, lightly hedged
Y - Young plant	2. All available, moderately hedged
M - Mature plant	3. All available, heavily hedged
D - Decadent plant	4. Largely available, lightly hedged
	5. Largely available, moderately hedged
	6. Largely available, heavily hedged
	7. Mostly unavailable
	8. Unavailable

Seedling: Plant up to three years old which has become firmly established, usually less than 1/8-inch diameter.

Young plant: Larger, with more complex branching and more fibrous bark than seedling, does not show signs of maturity. Usually between 1/8- and 1/4-inch diameter.

Mature plant: Complex branching, rounded growth form, larger size. Seed is produced on healthy plants. Generally larger than 1/4-inch diameter.

Decadent: Plant regardless of age that is in a state of decline, usually evidenced by 25 percent or more dead branches.

Lightly hedged: 0-40 percent of twigs browsed.

Moderately hedged: 41 to 60 percent of twigs browsed.

Heavily hedged: 61% or more of twigs browsed.

Degree of hedging is based on leader use over the past three years; current annual growth is not included.

All available:

	3.5 feet
	4 feet
Mule deer, cattle	5 feet
Elk	7 feet

Largely available: One-third to two-thirds of plant available to animal.

Mostly available: Less than one-third of plant available.

In classifying browse for form class, unavailability may be the result of height, location, or density.

2.3.13.2.2 Data Analysis

2.3.13.2.2.1 Range Condition - Range condition is described by a numeric rating based on a 100-point score. The rating is derived by summing weighted scores for species composition (54% of the final rating), forage cover (36%), and vigor (10%).

Species composition, the principal criterion on which range condition is based, was scored by summing the hits and tallies for all species within each classification group of decreasers, increasers, and invaders. These sums represent the percent composition for each group. Values must be adjusted for non-allowable species composition: if a species contributes more than a designated maximum percentage to total composition, the additional percentage is ignored. After such adjustment, the decreaser composition percent is multiplied by 2, increaser composition percent by 0.25 and invader composition percent by -1. Resulting values are summed. The final composition rate (0-54 points) is determined from this sum by the scale given in Table 2.3-325.

The vegetation cover score (0-36 points) reflects actual plant occurrence along the transect. It is determined from the sum of hits for all forage plants by the rate presented in Table 2.3-326. Vigor is rated by the method presented in Table 2.3-321.

2.3.13.2.2.2 Soil Stability Condition - A soil stability rating (0-100 points) is based on a combination of an erosion hazard score and current soil erosion. Both are given equal weights of 50 points. Erosion hazard is determined by the number of hits at transect sample points on bare soil, or gravel less than 1.9 cm (0.75 in.) in diameter. Hits on gravel larger than 1.9 cm in diameter are recorded as rocks. Erosion rating criteria are given in Table 2.3-327. Current soil erosion is rated by the method given in section "a", Data Collection (Table 2.3-322).

Table 2.3-325 Composition rate scale for range analysis data for RBOSP

Value	Rating	Value	Rating	Value	Rating
198 to 200	= 54	98 to 102	= 36	2 to - 2	= 18
192 to 197	= 53	92 to 97	= 35	-3 to - 8	= 17
186 to 191	= 52	87 to 91	= 34	-9 to - 13	= 16
181 to 185	= 51	81 to 86	= 33	-14 to - 19	= 15
175 to 180	= 50	75 to 80	= 32	-20 to - 25	= 14
170 to 174	= 49	70 to 74	= 31	-26 to - 30	= 13
164 to 169	= 48	64 to 69	= 30	-31 to - 36	= 12
159 to 163	= 47	59 to 63	= 29	-37 to - 41	= 11
153 to 158	= 46	53 to 58	= 28	-42 to - 47	= 10
148 to 152	= 45	48 to 52	= 27	-48 to - 52	= 9
142 to 147	= 44	42 to 47	= 26	-53 to - 58	= 8
137 to 141	= 43	37 to 41	= 25	-59 to - 63	= 7
131 to 136	= 42	31 to 36	= 24	-64 to - 69	= 6
125 to 130	= 41	25 to 30	= 23	-70 to - 74	= 5
120 to 124	= 40	20 to 24	= 22	-75 to - 80	= 4
114 to 119	= 39	14 to 19	= 21	-81 to = 86	= 3
109 to 113	= 38	9 to 13	= 20	=87 to - 91	= 2
103 to 108	= 37	3 to 8	= 19	-92 to - 97	= 1
				-98 to -100	= 0

Table 2.3-326 Criteria for determining vegetation cover score for data collected on range analysis paced transects for RBOSP

Pinyon-juniper grasslands

Hits	Score	Hits	Score	Hits	Score
60 plus	= 26	43	= 30	21	= 14
59	= 27	42	= 29	19 & 20	= 13
58	= 28	41	= 28	13	= 12
57	= 29	40	= 27	16 & 17	= 11
56	= 30	39	= 26	15	= 10
55	= 31	37 & 38	= 25	13 & 14	= 9
54	= 32	36	= 24	12	= 8
53	= 33	34 & 35	= 23	10 & 11	= 7
52	= 34	33	= 22	9	= 6
51	= 35	31 & 32	= 21	7 & 8	= 5
49 & 50	= 36	30	= 20	6	= 4
48	= 34	28 & 29	= 19	4 & 5	= 3
47	= 34	27	= 18	3	= 2
46	= 33	25 & 26	= 17	1 & 2	= 1
45	= 32	24	= 16	0	= 0
		22 & 23	= 15		

Table 2.3-327 Criteria for rating erosion hazard from range analysis data for RBOSP

Erosion Hazard (Percent surface exposed to erosion)	Rating Scale (0-50)
0- 7	50-41
8- 15	40-31
16- 30	30-21
31- 60	20-11
61-100	10- 0

2.3.13.2.2.3 Browse Condition and Trend - A numerical rating of browse condition is provided by determining the percentage of total plants on one transect that is lightly hedged (Form Class 1 & 4), moderately hedged (Form Class 2 & 5), and heavily hedged (Form Class 3 & 6). Hedging refers to the effect of large herbivore browsing on the natural growth form of a plant. Percentages are then checked against the browse scorecard (Table 2.3-328), and those that fall into more than one rate category within a hedging classification are entered in both (e.g., a value of 13% for Form Class 1 & 4 would be entered both in the Fair, 0-50, and the Poor, 0-25, categories). Finally, a numerical rating based on the one instance of percentages falling into two or more columns in one row is then recorded for each transect.

Browse trend is determined by using the difference between the number of young and decadent plants. A decadent browse plant is one which, regardless of age, exhibits dead or dying portions amounting to 25% or more of its total foliage. A numerical rating for browse trend is also provided in Table 2.3-328.

2.3.13.2.2.4 Condition Classes and Mapping - At each transect, range and soil condition are designated by an adjective condition class ranging from very poor to excellent(Table 2.3-329).

Two different maps are used to summarize range analysis data. On one map, grass-forb and soil condition and trend at each transect are described by a series of symbols. For example, the notation PJ (Cemo) - Agti, Orhy $\frac{56F\uparrow}{48F\downarrow}$ would signify a vegetation type dominated by pinyon-juniper, with a Cercocarpus montanus shrub understory, and with Agropyron trachycaulum and Oryzopsis hymenoides as the most prevalent forage species. The grass-forb vegetation has a numerical rating of 56, which places it in a fair condition class with an upward trend. Soil condition has a numerical rating of 48, placing it in a fair condition class with a downward trend.

Transect designations and browse condition and trend are described by symbols on the second map. The symbol 1-66/G would indicate the 66th transect sampled by observer number 1. The browse condition would be good and the trend would be stable.

Table 2.3-328 Criteria for rating browse condition and trend for range analysis data for RBOSP

A. Rating browse condition

	Form Classes (Degree of Hedging)			
	Light 1 & 4	Moderate 2 & 5	Heavy 3 & 6	Numerical rating
Good	50	0-50	0-25	15
Fair	0-50	50	0-50	10
Poor	0-25	0-50	50	5

B. Rating browse trend

	Numerical rating
Up: Young plants more than decadent	15
Stable: Young plants equal to decadent	10
Down: Young plants less than decadent	5

Table 2.3-329 Designation of condition classes for vegetation and soil data collected in each range analysis transect for RBOSP

Range condition (Composition and cover and vigor)		Browse Condition (form classes)		Soil Condition Erosion Hazard and current erosion	
Rating	Condition Class	Rating	Condition Class	Rating	Condition Class
81-100	Excellent	15	Good	81-100	Excellent
61-80	Good	10	Fair	61-80	Good
41-60	Fair	5	Poor	41-60	Fair
21-40	Poor			21-40	Poor
0-20	Very poor			0-20	Very poor

2.3.13.3 Results - The study area covered approximately 35,269 acres (see Figures 2.3-14 and 2.3-15) and encompassed six major vegetation types; pinyon-juniper, sagebrush, mixed brush, upland meadow, aspen, Douglas fir, and one variant of a major vegetation type, greasewood. These were distributed as follows: pinyon-juniper - 13,930 acres or 39.5% of the area; sagebrush - 11,853 acres or 33.6% of the area; mixed brush - 8,499 acres or 24.1% of the area; upland meadow - 496 acres or 1.4% of the area; aspen - 313 acres or 0.9% of the area; Douglas-fir - 115 acres or 0.3% of the area; and greasewood (variant of sagebrush vegetation type) - 63 acres or 0.2% of the area (Table 2.3-330). The survey area was situated so as to encompass Tract C-a and the full spectrum of elevational zones and vegetation types which surround it. All acreage information is summarized in Table 2.3-330 .

2.3.13.3.1 Range Condition and Trend - The major proportion (73.1%) of the study area, 25,823 acres, was in "Fair" condition (Table 2.3-331). Only 2.4% or 846 acres was classified in "Good" condition. Most of this, 631 acres, was in sagebrush communities; the remainder consisted of aspen and Douglas fir vegetation types. A total of 8,609 acres or 24.4% of the area was placed in the "Poor" condition class. Pinyon-juniper (6,939A) and sagebrush (1,643 A) sites contributed the largest proportions to this "poor" condition class.

No sites were in either the "Excellent" or "Very Poor" condition classes(Table 2.3-332). Few sites on the study area, however, have the potential for achieving the former condition. Range condition classification is predicated on the hypothesis that vegetation is a product of environment, subject to physical, edaphic, and biotic influences and limitations. Many western rangelands have never attained climax status because of one or more of these limitations. The great time involved to arrive at climax or "Excellent" condition precludes that condition from being a practical management objective (Stoddart & Smith, 1955).

Almost one-half of the study area, 48.5% or 17,100 acres was placed in the category of upward or improving range trend (Table 2.3-333). A majority of sites in all vegetation types except pinyon-juniper demonstrated upward

2 -

Examples 2.2-14 and
2.3-15

Diagram: -b/4b/6b

TABLE 2.3-330 SUMMARY OF ACREAGES AND PERCENTAGES CONDUCTED ON AND NEAR TRACT C-a IN RIO BLANCO COUNTY, COLORADO FOR RBOSP DURING SUMMER, 1975

Type	Acreage	% of Total
Pinyon-juniper	13931	39.5
Sagebrush	11853	33.6
Mixed Brush	8499	24.1
Upland Meadow	496	1.4
Aspen	313	0.9
Douglas-Fir	115	0.3
Greasewood	63	0.2
	35269	

TABLE 2.3-331 RESULTS OF RANGE ANALYSIS STUDIES
CONDUCTED ON AND NEAR TRACT C-a IN
RIO BLANCO COUNTY, COLORADO FOR RBOSP DURING SUMMER, 1975

Condition	Trend	Acreage	% of Total
	Pinyon-Juniper		
Fair	up	571	1.6
Fair	stable	449	1.3
Fair	down	5981	17.0
Poor	up	38	0.1
Poor	stable	81	0.2
Poor	down	6820	19.3
		13940	
	Sagebrush		
Good	up	353	0.1
Good	down	277	0.8
Fair	up	6566	18.6
Fair	stable	1791	5.1
Fair	down	1221	3.5
Poor	up	698	2.0
Poor	stable	-	-
Poor	down	945	2.7
		11851	
	Mixed Brush		
Fair	up	8130	23.0
Fair	stable	369	1.0
		8499	
	Upland Meadow (Balds)		
Fair	up	348	1.0
Fair	stable	100	0.3
Fair	down	21	0.1
Poor	down	27	0.1
		496	
	Aspen		
Good	up	133	0.4
Fair	up	180	0.5
		313	

Table 2.3-331 (Continued)

Condition	Trend	Acreage	% of Total
	Douglas-Fir		
Good	up	82	0.2
Fair	stable	33	0.1
		115	
	Greasewood		
Fair	stable	63	0.2
		63	

TABLE 2.3-332 SUMMARY OF RANGE CONDITION
CONDUCTED ON AND NEAR TRACT C-a IN
RIO BLANCO COUNTY, COLORADO FOR RBOSP DURING SUMMER, 1975

Condition Class	Acreage	% of Total
	Pinyon-Juniper	
Excellent	0.0	--
Good	0.0	--
Fair	7001.0	19.8
Poor	6939.0	19.6
Very Poor	0.0	--
	Sagebrush	
Excellent	0.0	--
Good	631.0	1.8
Fair	9578.0	27.1
Poor	1645.0	4.7
Very Poor	0.0	--
	Mixed Brush	
Excellent	0.0	--
Good	0.0	--
Fair	8499.0	24.1
Poor	0.0	--
Very Poor	0.0	--
	Upland Meadow	
Excellent	0.0	--
Good	0.0	--
Fair	448.0	1.3
Poor	48.0	0.1
Very Poor	0.0	--
	Aspen	
Excellent	0.0	--
Good	133.0	0.4
Fair	180.0	0.5
Poor	0.0	--
Very Poor	0.0	--
	Douglas-Fir	
Excellent	0.0	--
Good	82.0	0.2
Fair	33.0	0.1
Poor	0.0	--
Very Poor	0.0	--

Table 2.3-332 (Continued)

Condition Class	Acreage	% of Total
	Greasewood	
Excellent	0.0	--
Good	0.0	--
Fair	63.0	0.2
Poor	0.0	--
Very Poor	0.0	--
	Total Area	
Excellent	0.0	--
Good	846.0	2.4
Fair	25802.0	73.1
Poor	8621.0	24.4
Very Poor	0.0	--

TABLE 2.3-333 SUMMARY OF RANGE TREND
CONDUCTED ON AND NEAR TRACT C-a IN
RIO BLANCO COUNTY, COLORADO FOR ROBSP DURING SUMMER, 1975

Trend	Acreage	% of Total
	Pinyon-Juniper	
Up	609	1.7
Stable	530	1.5
Down	12801	36.3
	Sagebrush	
Up	7618	21.6
Stable	1791	5.1
Down	2442	6.9
	Mixed Brush	
Up	8130	23.0
Stable	369	1.0
Down	0	-
	Upland Meadow	
Up	348	1.0
Stable	100	0.3
Down	48	0.1
	Aspen	
Up	313	0.9
Stable	0	-
Down	0	-
	Douglas-Fir	
Up	82	0.2
Stable	33	0.1
Down	0	-
	Greasewood	
Up	0	-
Stable	63	0.2
Down	0	-
	Total Area	
Up	17100	48.5
Stable	2876	8.2
Down	15291	43.4

trend. Sites totalling 2,886 acres or 8.18% of the area exhibited stability or no apparent trend. The areas assigned a downward or deteriorating trend encompassed 15,291 acres or 43.4% of the total. The greatest proportion of deteriorating rangelands (12,801 acres) were in the pinyon-juniper vegetation type (Table 2.3-333).

2.3.13.3.2 Soil Condition and Trend - Soil condition and trend is related closely to the amount of ground cover including vegetation, rocks, and litter relative to the amount of bare ground.

Only 133 acres or 0.4% of the study area were found to be in the "Excellent" condition class (Table 2.3-334). All of these were in the aspen vegetation type. A mere 746 acres or 2.1% of the area were in "Good" condition. Sites in "Good" condition were found in the sagebrush, aspen, and Douglas fir types. "Fair" soil condition was found on 2,805 acres or 7.9% of the area. Most of the soils within the study area, 86.7% or 30,573 acres, were determined to be in the "Poor" condition class. Only 2.9% of the area, 1,010 acres, was in the "Very Poor" condition. All of the sites within the upland meadow community were in this condition class(Table 2.3-335).

Soils on 21,825 acres, or 61.9% of the study area, were in a downward or deteriorating trend (Table 2.3-336). Almost a third (29.5%) of the area - 10,421 acres - was placed in a stable or no apparent trend category. A small minority of the study area, 8.6% or 3,022 acres, was in improving or upward trend. The most markedly deteriorating soils were found in the pinyon-juniper vegetation type, followed by those in the sagebrush and then the upland meadow. associations (Table 2.3-336).

2.3.13.3.3 Browse Condition and Trend - Browse condition studies consider only three possible condition classes - good, fair, and poor. Browse condition was determined to be almost entirely (98.4%) within the "Good" condition class (Table 2.3-337). The area encompassed by this category comprised 34,219 acres. A collective area of sites totalling 482 acres, 1.4% of the area, was placed in the "Fair" condition class. Only 73 acres, 0.20% of the area, was judged to be in "Poor" condition(Table 2.3-337).

TABLE 2.3-334 RESULTS OF SOIL CONDITION AND TREND CONDUCTED ON AND NEAR TRACT C-a IN RIO BLANCO COUNTY, COLORADO FOR RBOSP DURING SUMMER, 1975

Condition	Trend	Acreage	% of Total
	Pinyon-Juniper		
Fair	down	27	0.01
Poor	stable	134	0.4
Poor	down	13648	38.7
Very Poor	down	122	0.3
		13930	
	Sagebrush		
Good	up	683	1.9
Fair	up	298	0.8
Fair	stable	395	1.1
Fair	down	1487	4.2
Poor	up	1730	4.9
Poor	stable	1105	3.1
Poor	down	5763	16.3
Very Poor	stable	42	0.1
Very Poor	down	350	1.0
		11853	
	Mixed Brush		
Fair	stable	369	1.0
Poor	stable	8130	23.1
		8499	
	Upland Meadow		
Very Poor	stable	100	0.3
Very Poor	down	396	1.1
		496	
	Aspen		
Excellent	up	133	0.4
Good	up	54	0.2
Fair	up	62	0.2
Poor	up	64	0.2
		313	
	Douglas-Fir		
Good	stable	10	0.0
Fair	stable	73	0.2
Fair	down	33	0.1
		116	
	Greasewood		
Fair	stable	63	0.2
		63	

TABLE 2.3-335 SUMMARY OF SOIL CONDITION
CONDUCTED ON AND NEAR TRACT C-a IN
RIO BLANCO COUNTY, COLORADO FOR RBOSP DURING SUMMER, 1975

Condition	Acreage	% of Total
	Pinyon-Juniper	
Excellent	0.0	--
Good	0.0	--
Fair	27.0	0.1
Poor	13782.0	39.0
Very Poor	122.0	0.3
	Sagebrush	
Excellent	0.0	--
Good	683.0	1.9
Fair	2179.0	6.2
Poor	8598.0	24.4
Very Poor	392.0	1.1
	Mixed Brush	
Excellent	0.0	--
Good	0.0	--
Fair	369.0	1.0
Poor	8130.0	23.1
Very Poor	0.0	--
	Upland Meadow	
Excellent	0.0	--
Good	0.0	--
Fair	0.0	--
Poor	0.0	--
Very Poor	496.0	1.4
	Aspen	
Excellent	133.0	0.4
Good	54.0	0.2
Fair	62.0	0.2
Poor	64.0	0.2
Very Poor	0.0	--
	Douglas-Fir	
Excellent	0.0	--
Good	10.0	0.0
Fair	105.0	0.3
Poor	0.0	--
Very Poor	0.0	--

Table 2.3-335 (Continued)

Condition	Acreage	% of Total
	Greasewood	
Excellent	0.0	--
Good	0.0	--
Fair	63.0	0.2
Poor	0.0	--
Very Poor	0.0	--
	Total Area	
Excellent	133.0	0.4
Good	746.0	2.1
Fair	2806.0	7.9
Poor	30574.0	86.7
Very Poor	1010.0	2.9

TABLE 2.3-336 SUMMARY OF SOIL TREND
CONDUCTED ON AND NEAR TRACT C-a IN
RIO BLANCO COUNTY, COLORADO FOR RBOSP DURING SUMMER,1975

Trend	Acreage	% of Total
	Pinyon-Juniper	
Up	0.0	--
Stable	134.0	1.0
Down	13797.0	99.0
	Sagebrush	
Up	2710.0	7.7
Stable	1543.0	4.4
Down	7600.0	21.5
	Mixed Brush	
Up	0.0	--
Stable	8499.0	24.1
Down	0.0	--
	Upland Meadow	
Up	0.0	--
Stable	100.0	0.3
Down	396.0	1.1
	Aspen	
Up	313.0	0.9
Stable	0.0	--
Down	0.0	--
	Douglas-Fir	
Up	0.0	--
Stable	82.0	0.2
Down	33.0	0.1
	Greasewood	
Up	0.0	--
Stable	63.0	0.2
Down	0.0	--
	Total Area	
Up	3023.0	8.6
Stable	10421.0	29.5
Down	21825.0	61.9

TABLE 2.3-337 SUMMARY BROWSE CONDITION
CONDUCTED ON AND NEAR TRACT C-a IN
RIO BLANCO COUNTY, COLORADO FOR RBOSP DURING SUMMER, 1975

Condition	Acreage	% of Total
	Pinyon-Juniper	
Good	13931	40.1
	Sagebrush	
Good	11399	32.8
Fair	454	1.3
	Mixed Brush	
Good	8499	24.4
	Aspen	
Good	313	0.9
	Douglas-Fir	
Good	15	0.0
Fair	27	0.1
Poor	73	0.2
	Greasewood	
Good	63	0.2
	Total Area	
Good	34219	98.4
Fair	482	1.4
Poor	73	0.2

Even though most of the browse was in good condition, the largest portion, 59.7% or 20,756 acres, exhibited a deteriorating or downward trend (Tables 2.3-338 and 2.3-339). An area about one-half that size, 10,435 acres or 30.0% of the acreage, showed no apparent trend.

2.3.13.4 Summary and Conclusions - Range condition classes can be described conceptually as stages of plant community succession or retrogression, resulting from physical, edaphic, and biotic interactions. The latter category includes the grazing impacts of domestic livestock, feral horses, big game, and smaller herbivores and is the most amenable to manipulation by man.

Range condition and trend studies show no evidence of intensive, short term overuse by ungulates in the study area. However, the facts that approximately 150 feral horses utilize the study area (personal communication, November 1975, Meeker BLM Office), and that there is an apparent lack of intensive management evidenced by the deficiency of agency site analyses and by the overstocking of two of the three allotments last season, strongly indicate the possibility of overgrazing. Three-fourths of the area was found to be in "Fair" condition (Table 2.3-331), almost one-fourth in "Poor" condition, and a small percentage in "Good" condition. A slightly greater proportion (48.5%) of the area exhibited an upward trend or improving condition compared to that showing a downward trend (43.4%). The remaining sites showed no apparent trend. These comparisons indicate a state of relative equilibrium and no conclusive tendencies.

Soils, however, were found to be in a relatively depleted condition, with 86.7% of the area soils in "Poor" condition. Moreover, 61.9% of the area was in a downward trend versus 8.6% in an upward trend, with the remainder showing no apparent trend. The studies indicate that although rangelands may have generally stabilized, soil conditions are deteriorating.

An analytical evaluation of the data assembled during the range studies suggests that one of two processes may be occurring on the study area. Both processes are propounded here as hypotheses for the consideration of the reviewer, and

TABLE 2.3-338 BROWSE CONDITION AND TREND
CONDUCTED ON AND NEAR TRACT C-a IN
RIO BLANCO COUNTY, COLORADO FOR RBOSP DURING SUMMER, 1975

Condition	Trend	Acreage	% of Total
	Pinyon-Juniper		
Good	up	731	2.1
Good	stable	1254	3.6
Good	down	11945	34.4
	Sagebrush		
Good	up	1851	5.3
Good	stable	1051	3.0
Good	down	8496	24.4
Fair	up	203	0.6
Fair	down	251	0.7
	Mixed Brush		
Good	up	369	1.1
Good	stable	8130	23.4
	Upland Meadow		
Not applicable			
	Aspen		
Good	up	313	0.9
	Douglas-Fir		
Good	up	15	0.0
Fair	up	27	0.1
Poor	up	73	0.2
	Greasewood		
Good	down	63	0.2

TABLE 2.3-339 SUMMARY BROWSE TREND
CONDUCTED ON AND NEAR TRACT C-a IN
RIO BLANCO COUNTY, COLORADO FOR RBOSP DURING SUMMER, 1975

Type	Acreage	% of Total
	Pinyon-Juniper	
Up	731	2.1
Stable	1254	3.6
Down	11945	34.4
	Sagebrush	
Up	2054	5.9
Stable	1051	3.0
Down	8748	25.2
	Mixed Brush	
Up	369	1.1
Stable	8130	23.4
	Aspen	
Up	313	0.9
	Douglas-Fir	
Up	115	0.3
	Greasewood	
Down	63	0.2
	Total Area	
Up	3582	10.3
Stable	10435	30.0
Down	20756	59.7

arguments in support of each are explored and explicated. Long term studies would be necessary to establish the absolute validity of either theory.

One possibility is that a differential exists between the range and soil recovery curves, or a "time lag" delays the response of soil conditions. If a recovery has occurred on most ranges within the study area, condition has stabilized; i.e., consumption by herbivores is not adversely affecting community composition, plant density, or plant vigor. Conversely, soil conditions are generally lower and continuing to decline. It should perhaps be explained that changes in condition and trend are not immediate responses to release from grazing or other disturbance. There is a "momentum effect"--that is, alleviation of the stress factor may require a number of years for a "turnaround". If this is the case, there has not yet been a distinct tendency for stabilization or improvement of soil conditions. There are a multitude of factors or interactions of factors which may be affecting the recovery differential. A most logical explanation might simply be that soil responses to improved conditions require a longer time to manifest themselves than do vegetation responses. A climatic shift or a change in precipitation patterns or intensities could influence soil conditions and trends but meteorological records do not indicate that such is the case (personal communication, November, 1975, Greg Cresswell, EG&G). Even though many of the forage plants present are desirable, their low density and inability to form a closed canopy expose large proportions of bare soils to the elements. Features inherent in the soils themselves, such as their high erodability, may make soil movement (hence the condition) a natural phenomenon of the regional geology.

There is evidence to support the first theory. In 1971, the Cathedral Bluffs Grazing Unit was divided into individual grazing allotments. Management plans to ensure more efficient utilization of forage and a more balanced allocation of that resource were implemented by the BLM on the Square S and Reagle Allotments four years ago (personal communication, November, 1975, Stan Colby, Bill Lawthorne, Meeker, BLM office). Ranchers interviewed in the area believe that local ranges have been improving gradually for the past several years and looked

better this past season than at any time in recent years (personal communications, July, 1975). Mule deer, which utilize the area for winter and transitional ranges, have decreased drastically since the 1950's (personal communication, 1975, Colorado Division of Wildlife). Given these circumstances, a recovery in range condition could be reasonably expected.

A second hypothesis would perceive the range condition and trend studies inconclusive. Range condition is only one of several indicators of the health and well-being of a grazing ecosystem. Although the applied methodology revealed local ranges to be in generally moderate condition, these ratings were heavily influenced by the relatively high numbers of desirable forage species. The other factors considered in determining condition (cover and vigor) were generally low. Widespread retrogradation of soils in the study area and inferior forage production (see Production-Utilization Section) are other indicators which reflect a declining capacity of these ranges to support existing ungulate populations. It could be argued, with the considerations above in support, that the ranges examined have not been managed to their fullest potential and that as a result, their ability to sustain existing levels of grazing pressures is diminishing. The proliferation of feral horses since the 1971 Wild Horse and Burro Act with no concurrent effort to reduce livestock numbers is no doubt an important factor in that decline. The consultants are inclined to accept this latter hypothesis as the more valid. Evidence to support it, if not overwhelming, is sufficient for reasonable conviction.

Range conditions were better on north-facing slopes which retained soil moisture longer into the growing season than on south-facing slopes.

Browse conditions on the study area were overwhelmingly in the "Good" condition class. The largest portion, however, was seen to exhibit downward trend, or a deterioration in condition. Mule deer use the area primarily as transitional range except in mild winters, a fact which is reflected in the favorable condition which prevails. The evidence that browse conditions are deteriorating may correspond to increases in feral horse numbers. These animals use the area year-round and utilize the browse species heavily when snow depths retard access to preferred herbaceous species.

2.3.13.5

Raw Data for Range Analysis

2.3.14 Range Production - Utilization

2.3.14 RANGE PRODUCTION-UTILIZATION

2.3.14.1 Introduction - Forage production and utilization studies were undertaken to measure the actual forage being produced annually per unit area within each major association. The amount of forage taken by large herbivores at a given point in time is also measured. These studies will reveal the relative preferences of herbivores for particular plant associations.

2.3.14.2 Methods

2.3.14.2.1 Data Collection - Grass and forb production utilization studies were conducted within four principal plant associations: pinyon-juniper, sagebrush, mixed brush and grass balds. Annual forage production figures were obtained by late summer clippings of .89 m^2 (9.6 sq ft) plots which have been protected through the growing season by conical 5 cm x 10 cm (1.95 in. 3.9 in) mesh welded wire cages. Sixty-six cages were distributed throughout the study area. The locations of these cages corresponded to the locations of certain previously established vegetation transects for phytosociological studies. Numerical distribution of cages approximated the natural proportionate distribution of vegetation types within the study area. These sites were selected to encompass physical parameters such as slope, aspect, and elevational variations occurring within a vegetation type. The cages were distributed as follows: pinyon-juniper sites - 21, sagebrush sites - 26, mixed brush sites - 13, and grass balds - 10. Grass balds do not constitute a major area within the region of study but are important from a forage production standpoint. In the first three vegetation types, two cages were situated in the locality of each non-permanent vegetation transect of the May, 1975 phytosociological studies. In the grass bald sites, two cages were located

at each vegetation transect regardless of its permanence status from the May 1975 vegetation sampling period. Shadscale, rabbitbrush, greasewood, Douglas-fir, aspen, and riparian sites were not sampled due to the relatively minor contribution these vegetation types make to total productivity in the study area. Cages were located 3-5 m (10 to 17 ft) to the right of the 20 m (66 ft) and 100 m (330 ft) mark on each non-permanent transect. Cages are 1.64 m (5.38 ft) tall and 1.65 m (5.41 ft) in diameter and are anchored with rebar stakes.

After completion of the growing season in late August or early September, forage utilization was measured by comparing clippings from plots which were protected from grazing with clippings from plots which were unprotected. A grazed (unprotected) plot was located near each caged plot by using the second hand of the observer's watch to determine direction, and a random numbers table to determine distance in paces. The unprotected plot was clipped and weighed; all samples were marked with the location and date of collection.

Ocular estimates of forage production were made concurrently to supplement the above method. Observers underwent a training period during which they ocularly estimated, then clipped and weighed for comparison, enough plots to ensure consistency of estimation. For each cage sample, ten ocular estimate plots were sampled, one of which (the unprotected plot described above) was clipped and weighed to provide a correction factor for and a check of the observer's accuracy of estimation. Estimates and clipped weights were recorded on a standard data form (Figure 2.3-16).

All clipped samples were returned to the ECI laboratory, oven-dried at 70°C for at least 24 hours in a Thelco oven, and weighed again to provide dry weight estimates.

File No._____

FORAGE PRODUCTION AND UTILIZATION

Project_____ Location: T_____ R_____ S_____ 1/4 1/4 S_____ Date_____

Field Analyst(s)_____ Lab Analyst_____ QA Check_____Date_____

General Site Description_____

Conditions Possibly Affecting Data_____

OCCULAR ESTIMATION

20 m		100 m	
Plot		Plot	
1	_____	1a	_____
2	_____	2a	_____
3	_____	3a	_____
4	_____	4a	_____
5	_____	5a	_____
6	_____	6a	_____
7	_____	7a	_____
8	_____	8a	_____
9	_____	9a	_____
10	_____	10a	_____
Cage 1	_____	Cage 2	_____

Plot 1 field weight_____ Plot 1a field weight_____

Plot 1 dry weight_____ Plot 1a dry weight_____

Cage 1 field weight_____ Cage 2 field weight_____

Cage 1 dry weight_____ Cage 2 dry weight_____

Figure 2.3-16 Forage production and utilization data sheet for RBOSP

2.3.14.2.2 Data Analysis - All ocular estimates were corrected to dry weights and also corrected for errors of ocular estimation by the following formula:

$$\text{ocular estimate} \times ((1-(\bar{x}_1/\bar{y}_1))+1) \times ((1-(\bar{y}_1/\bar{y}_2))+1)$$

Where: $\bar{x}_1$ = mean of ocular estimates
$\bar{y}_1$ = mean of clipped weights
$\bar{y}_2$ = mean of dried weights

For each vegetation type sampled, the following parameters were estimated:

- Dry weight production (lbs/A and Kg/ha)
  lbs/A = corrected cage plot mean x 10
  kg/ha = corrected cage plot mean x 11.3
- Percent utilization:
  $$\frac{\text{(corrected cage plot mean - corrected ocular estimate mean)}}{\text{(corrected cage plot mean)}} \times 100$$
- Utilized forage production (lbs/A and kg/ha)
  lbs/A = (corrected cage plot mean-corrected ocular estimates mean) x 10
  kg/ha = (corrected cage weight mean - corrected ocular estimates mean) x 11.3

2.3.14.3 Results - Production varied widely over the study area from a mean of 92.86 pounds/acre (104.93 kilograms/hectare) on pinyon-juniper sites to 240.00 pounds/acre (271.20 kilograms/hectare) on mixed brush sites. Sites located in the sagebrush vegetation type produced an average 185.50 pounds/acre (209.62 kilograms/hectare) and upland meadow sites produced 173.00 pounds/acre (195.49 kilograms/hectare) (Table 2.3-340).

These figures compare unfavoranly with Soil Conservation Service (United States Department of Agriculture, 1975) estimates of range site production potentials for northwestern Colorado as follows. The "Stoney Foothills Range Site", which corresponds to most area pinyon-juniper vegetation types, is capable of producing 400-800 pounds of air-dry forage per acre. The "Mountain Loam and Loamy Slopes Range Sites", which encompass the mixed brush vegetation types, have been given production of

Table 2.3-340 Production utilization studies conducted on and near Tract C-a in Rio Blanco County, Colorado for RBOSP during the fall of 1975

Vegetation Site	Dry Weight Production (lbs./A)	Dry Weight Production kg/ha)	Percent Utilization	Utilized Forage Production (lbs./A)	Utilized Forage Production (kg/ha)
Pinyon-juniper	92.9	104.9	24.1	16.0	18.0
Sagebrush	185.5	209.6	6.9	9.9	11.1
Mixed Brush	240.0	271.2	40.7	74.9	84.6
Grass Bald	173.0	195.5	42.7	50.2	56.7

1200-1800 and 500-1200 pounds/acre, respectively. The "Clayey Foothills Range Site", corresponding to many study area sagebrush vegetation type sites, has a production potential of 600-1200 pounds/acre. The SCS "Dry Exclosure Range Site" corresponds to the upland meadow vegetation type and has a production potential of 500-650 pounds/acre.

Utilization studies were undertaken concurrently with productivity studies. Such studies would normally be conducted at the conclusion of the grazing season but there is year-round grazing within the study area. Cattle use the area until they are excluded by a permanent snowpack. Feral horses remain there all year, pawing through snow to obtain the remaining forage. The end of the growing season, approximately the beginning of September, was selected as the sampling period since the time was optimum for productivity clipping. Because of aforementioned conditions, there is no optimum time for obtaining utilization measurements. Those that follow should be interpreted as relative indices of herbivore utilization on the various vegetation types through completion of the growing season, not as total annual utilization.

2.3.14.4 Summary and Conclusions - Utilization ranged from 7% on sagebrush sites to 43% on upland meadow sites. Mixed brush sites had 41% of total forage production utilized and pinyon-juniper sites received 24% utilization (Table 2.3-340).

Forage production was well below minimal SCS expectations (United States Department of Agriculture, 1975) for range sites included in the study area during unfavorable years. Precipitation was subnormal this past year (personal communication November, 1975, G. Cresswell, EE&G-information obtained from compilation of weather records from Rifle, Meeker, and Rangely, Colorado), but not sufficiently subnormal to acocunt for the low production. Pinyon-juniper sites were the lowest producing ranges, while mixed brush vegetation type produced the highest amount of forage.

Low productivity is normally an indicator of prolonged heavy grazing with a subsequent reduction in the vigor of forage plants. Productivity is also highly correlated with the increased precipitation occurring at higher elevations. The upland meadow sites, however, are swept clean of winter snow accumulations by high velocity winds and so do not receive the benefit of precipitation

occurring as snow. Aerial surveys have revealed that these areas are utilized heavily in the winter by feral horses, which contributes even more to site depletion. The mixed brush vegetation type exhibited the greatest productivity because of deeper soils (with the exception of bottomland sage stands on alluvial deposits) and the most favorable moisture conditions. The pinyon-juniper sites were the least productive due to the shallow soils, lesser annual precipitation, and competition for soil moisture between forage and canopy species. The fact that feral horses and mule deer concentrate in these sites during winter months to seek respite from chilling winds and temperatures contributes to the depleted conditions which prevail there. The sagebrush vegetation type was the most variable since no distinction was made between upland and bottomland sites. Bottomland sites on deep alluvial deposits where basin wildrye (Elymus cinereus) was dominant were highly productive, whereas some upland sites were almost void of a grass-forb understory. These differences were attributed to variations in soil depth, and soil moisture competition.

By early September, utilization was directly related to elevational zonations. Heaviest use occurred on the upland meadow sites (the bald areas atop the highest ridges in the study area). The next heaviest use was found in the mixed brush vegetation type, which occurs primarily in the next lower elevational zone. Intermediate use was seen in the pinyon-juniper vegetation type. Lowest utilization was found on the lower occurring sagebrush vegetation types.

Utilization is directly related to ungulate distribution, the causative factors of which are discussed in another section (see Livestock Section).

2.3.14.5

Raw Data
for
Range Production Utilization

File No. C.1.1.1

Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-1 Vegetation Type SAGEBRUSH

Location: T 2S R 99W S 2 1/4 1/4 S NE/SW Date 7/11/75

Slope 3-5° Aspect 360° Elevation 6980'

Field Analyst(s) DAK Pace Interval 21

QA Check RAM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↓ D

Soil Stability

Current Erosion 15

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Dcc	Agtr		::	4
Inc	Stco ✗	.	.	2
Dcc	Orhy	.	::	6
Dcc	Agspi		.	1
Inc	Pose	.	⊡	9 (5)
Dcc	TRIFO		::	4
Dcc	Agsm	::	⊠⊠⊠::	36 (-0)
Inc	Sihy.		:	1
Inc	CAge.		::	3
Inc	Phho.	:	⊡	11 (5)
Inc	Spco 2	.	⊠::	14 (5)
Dcc	Hebo		::	3
Inc	Hanu.		.	1
Inc	Asdi.		.	1
Dcc	Stco 3		.	1
Inc	Aspu.		.	1
Inc	Crac		.	1
Inc	Crse		.	1

Litter	⊠⊡
Rock	:
Bare Ground	⊠⊠⊠⊠⊠⊠⊠

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	::	⊠⊠.			⊠	⊠.			::		

File No. C.1.1.1

Sheet 1 of 2

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-2 Vegetation Type Sagebrush

Location: T 25 R 99W S 10 1/4 1/4 S SE/NW Date 7/11/75

Slope 5-10° Aspect 310° Elevation 7140'

Field Analyst(s) DAK Pace Interval 4

QA Check ABM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend → S

Soil Stability

Current Erosion 11

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Crac.		.	1
INC	PENST		.	1 ~~5~~
INC	Bpco 2		.	1
INC	Luca	::	:	5
INC	Coum		.	1
DEC	Orby	.	⊔	8
DEC	Koer	.	::	21
DEC	Stco1	::	⊠ L:	20 (15)
DEC	Fear 2		.	1
DEC	Agtr		.	1
INC	Cage		□	8
DEC	Agsm		⊠:	12
DEC	Trgy		.	1
INC	Siby	:	⊔	9
INC	Pose	.	1:	6 (5)
INC	Asdi		::	3
INC	Hanu		.	1
INC	Gusa		.	1
INC	Semu 2	.	.	2
INC	Chdo		.	1
INC	Crse		::	4
INC	Aspu	.		1
INC	Phlo		.	1
INC	Ipag	.	.	2
INC	Stco 3		:	2
	Litter	⊠ ⊠ ::		
	Rock	::		
	Bare Ground	⊠ ⊠ ⊠ ⊠ ⊠ ⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠	L	::	⊠	-		L			⊠ ::
Tera		::			::						
Chvi		::			::						

ECI

File No. C.1.1.1

Sheet 2 of 2

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. OAK-2

RAM 9/6/75

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Hebo			2
INC	Phho			1

BROWSE CONDITION

Species	Age Class				Form Class						
	Young	Mature	Decadent	Dead	1	2	3	4	5	6	Unavailable

File No. C.1.1.1

Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-3 Vegetation Type Sagebrush

Location: T 25 R 99W S 17 1/4 1/4 S NW/SE Date 7/11/75

Slope 10-12° Aspect 20° Elevation 7320'

Field Analyst(s) DAK Pace Interval 1

QA Check KBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend → S

Soil Stability

Current Erosion 28

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec.	Stco X	1	⊠ 1	20 (15)
Dec.	Agtr	1	□	11
L.E.C.	Kocr		3	3
INC.	POA spp.	1	5	5
	Orhy	1	6	6
Dec	Agsm	1	⊠⊠	22 (20)
INC	Pose	1	7	7 (5)
Dec	Trgy		1	1
INC	Cage		1	1
INC	Sihy		1	1
INC	Crdc		3	3 (1
INC	Coum	1	5	5
INC	Crse		1	1
INC	Ipag		1	1
Inc	Asdi		1	1
INC	Hanu		1	1
DEC	Hebo	1	5	5
INC	Spco 2		1	1
INC	ERIGE		1	1
INC	ASTRA		1	1
	Litter	⊠⊠4		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠1		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠1	1	1	⊠	□	1				2
Chvi	1	1	1		2	1					

ECI

File No. C.1.1.1

Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-4 Vegetation Type Sagebrush

Location: T 2S R 99W S 9 1/4 1/4 S NE/SE Date 7/12/75

Slope 5-10° Aspect 320° Elevation 7080'

Field Analyst(s) DAK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 12

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Semu 2		::	4
INC	Ipag		.	1
INC	Hanu		L:	6 (5)
INC	Assp 3		.	1
DEC	Kocr	:	⊠.	13
DEC	Stco 1	.	I:	6
DEC	Agtr		L	7
DEC	Orhy	:	I:	7
DEC	Trgy		::	4
INC	Sihy		.	1
INC	Cage		::	3
DEC	Agsm		::	4
INC	Phho	:	⊠.	13 (5)
INC	Lile		:	2
INC	Crac	.	::	4 (2)
INV	Brte		:	2
INC	Crse		::	4
INC	Stco 2	.	.	2
DEC	Cach 3		:	1
INC	Aspu		:	2
INC	Asdi		.	1
DEC	Hebo	.	:	3
INC	Spco 2		:	2
INC	Phlo	.	.	2
INC	Chdo	.	.	2
	Litter	⊠⊠:		
	Rock	⊠⊠		
	Bare Ground	⊠⊠⊠⊠L:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	I:	□	::		L:	□					:
Chvi	::				L/						
Isca	..				:						
~~Amal~~	.					:/					

(EC)

File No. C.1.1.1

Sheet 2 of 2

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-4

DOM 9/16/75

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Hyac			1
INC	Erlo			1
INC	Opfr			1

BROWSE CONDITION

Species	Age Class				Form Class						
	Young	Mature	Decadent	Dead	1	2	3	4	5	6	Unavailable

File No. C.1.1.1
Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-5 Vegetation Type Pinyon Juniper
Location: T 25 R 99W S 4 1/4 1/4 S SE/SE Date 7/12/75
Slope 15-20° Aspect 120° Elevation 7000'
Field Analyst(s) DAK Pace Interval 4
QA Check DAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend ↓ D

Soil Stability

Current Erosion 15
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
LEC	Orhy	~~⊠⊠~~	⊠⊠:	22 (20)
DEC	Agtr		1:	6
DEC	Stco 1		:	2
DEC	~~Feid~~ Fear		:	2
INC	Sihy		⊠⊠□	29
DEC	Agsm		1:	5
INC	Pose			1
INC	Cage		⊠	10
DEC	Trgy		:	2
INC	Crse		.	1
INC	Aggl		.	1
INC	Stco 3		.	1
INC	Phfl		1:	6 (=)
INC	Phho		.	2
INC	Spco 2		.	1
INC	Ipag		::	4
INC	Chdo		:	2
INC	Luca		.	1
INC	Crac		.	1
INC	Aspu		.	1
	Litter	⊠ 1:		
	Rock	⊠⊠⊠,		
	Bare Ground	⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Putr	.	::			.		::				
Artr		.	::		/	::					
AMAL	.	⊠			.			⊠			
Juos		:	:		.			□			
Cemo		.					.				
Pied		::	:		.			1:			

File No. C.1.1.1

Sheet 1 of 2

RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-6 Vegetation Type Sagebrush

Location: T 2S R 99W S 9 1/4 1/4 S SW/SW Date 7/12/78

Slope 5-10° Aspect 260° Elevation 7280'

Field Analyst(s) DAK Pace Interval 4

QA Check KBM 9/16/78

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend → S

Soil Stability

Current Erosion 20

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Feat		.	1
INC	POAsp.	:	::	8
DEC	Agtr	.	.	2
DEC	Agspi	.		1
DEC	Kocr		::	4
DEC	Orhy		:	2
DEC	Pofe	.		1
INC	Cage	.	::	5
INC	Pose.	::	⊠	13 (5)
DEC	Agsm	.	⊠⊠	21 (2)
DEC	Tray		⊠.	11 (9)
INC	Erov		.	1
INC	Luca	:	⊠	11 (7)
INC	Crse	.	.	2
INC	Acgl	.		1
INC	Sbbo 2		::	4
INC	Crac		.	1
INC	Asdi		.	1
INC	Aspu		.	1
INV	Brte		.	1
INC	Siby		.	1
INV	Brtc		.	1
INC	Phho	.	.	2
DEC	Hebo		.	1
INC	Erlo		.	1
	Litter	⊠⊠		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠L	::	:	⊠	::					:
Chvi	:	.			:	.					

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-6

KDM 9/16/75

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Phlo			1

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable

PLEASE DO NOT REMOVE

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-7 Vegetation Type Sagebrush

Location: T 25 R 99W S 17 1/4 1/4 S NW NE Date 7/12/75

Slope 10° Aspect 340° Elevation 7200'

Field Analyst(s) DAK Pace Interval 4

QA Check Rom 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend → S

Soil Stability

Current Erosion 19

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Stco		:	2
Dec	Orhy		⊠	10
Dec	Kocr		1:	5
Dec	Agtr		1:	5
INC	POA sp.	.		1
Dec	Agsm	:	□	10
INC	Pase	.	::	4
Dec	Irgy		::	4
INC	Sihy	.	⊔	7
INC	Luca	::	⊔	10 (9)
INC	Crac		.	1
INC	Aspy		::	3
INC	Phpi		:	2
INC	Life	.		1
INC	Phlo	.		1
INC	Spco 2	.	□	9 (5)
Dec	Coch 3		.	1
INV	Brte	.	::	4
INC	Semu 2	.	:	3
INC	Hoac	.		1
INC	Coum		::	3
Dec	Hebo		⊔	7
INC	Hanu		.	1
INC	Erlo		::	2
INC	Chdo		.	1
	Litter	⊠⊠⊔		
	Rock	⊠		
	Bare Ground	⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	::	⊠:	::		⊠::	::					
Chvi	::	::			⊔						

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Sheet 2 of 2

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAk-7

KBM 9/16/75

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Hyac			1
INC	Asdi			1

BROWSE CONDITION

Species	Age Class				Form Class						
	Young	Mature	Decadent	Dead	1	2	3	4	5	6	Unavailable

BROWSE EVALUATION DEPARTMENT

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-8 Vegetation Type Pinyon Juniper

Location: T 2S R 99W S 17 1/4 1/4 S NE/NW Date 7/14/75

Slope 25-30° Aspect 120° Elevation 7100'

Field Analyst(s) DAK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↑

Soil Stability

Current Erosion 15

Current Trend →

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr		⊠⊠⊠:	34 (20)
DEC	Orhy		⊠⊠⊠⊠1:	45 (20)
INC	Erum		☑	9 (5)
INC	Cage		.	1
INC	Siby		:	2
INC	DESCU		.	1
INC	Crse		:.	3
INV	Brte		.	1
INC	Phfl		.	1
INC	Crac		:	2
DEC	Hebo		.	1
	Litter	☑		
	Rock	⊠⊠⊠1:		
	Bare Ground	⊠⊠⊠⊠⊠1:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Cemo	:				:						
Ditr		,					.				
Chna		1:			1:						
Pied		1:						::	.		
Juoc		1:	:.					☐			
Artr				:							:

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-8

Rom 9/6/75

COMPOSITION

Classification	Species	Hits	Tally	Total

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Chvi											
EPHED											

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-9 Vegetation Type Sagebrush

Location: T 25 R 99W S 17 1/4 1/4 S SWNW Date 7/14/75

Slope 6° Aspect 100° Elevation 7180'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ 11

Soil Stability

Current Erosion 27

Current Trend → 5

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	:·	⊠ 1:	18
DEC	Agtr		::	4
DEC	Agsm	L	⊠ :·	19
INC	Sihy	:	⊠⊠ :·	25
INC	Crse	::	□	12 (3)
INV	Brte	·	⊠□	19
INC	Spco2		::	3

Litter	⊠⊠⊠⊠L	
Rock	□	
Bare Ground	⊠⊠⊠	

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	·	⊠:	1:	L	⊠⊠						L

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-1D Vegetation Type Sagebrush
Location: T 2S R 99W S 18 1/4 1/4 S NE/SE Date 7/14/75
Slope 0° Aspect 0° Elevation 7400'
Field Analyst(s) DAK Pace Interval 4
QA Check RMM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 3
Current Trend ↓ D

Soil Stability

Current Erosion 1D
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Kocr		:.	3
INC	POA spp.		.	1
DEC	Agtr		.	1
INC	Pose	:.	⊠::	17 (5)
DEC	Agsm		⊠⊠:'	23 (20)
DEC	Trgy		⊔	4 (5)
INC	Phlo		⊠	10 (5)
INC	Spco2		::	4
INC	Ipag	.	.	2
INV	Brte		.	1
INC	Coum		□	8 (5)
INC	Odfr		.	1
INC	Aspu		:	2
INC	Toin		.	1
INC	Asdi	.	::	5
DEC	Hebo	.	⊔	8
INC	Erlo		⁞:	5
INC	Croc		.	1
	Litter	⊠⊠⊡		
	Rock			
	Bare Ground	⊡⊠⊠⊡⊠⊠:.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	:.	⊠:	:.		⊡::	⁞:					
Chv.	⁞:	.			⊓:						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-11 Vegetation Type Mixed Brush

Location: T 25 R 99W S 18 1/4 1/4 S SE/NE Date 7/14/95

Slope 16° Aspect 290° Elevation 7200'

Field Analyst(s) DAK Pace Interval 2

QA Check RMM 9/16/95

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend → S

Soil Stability

Current Erosion 21

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco	:	.	3
DEC	Orhy	□	⊠.	19
DEC	Fear		1:	5
DEC	Agtr	:	⊠:·	15
DEC	Kocr	.	.	2
	POA spp		:	2
INC	Cage	1:	⊔	12
DEC	Tray		.	1
DEC	Viam		.	1
INC	Erov		:·	3
INC	Pose	.		1
INC	Mare	.	.	2
INV	STELL		.	1
INC	Mela 2		:·	3 (2)
INV	Brte		.	1
INC	Luca	1:	⊠:·	18 (7)
INC	Asdi		:	2
DEC	Cach 3	.	:	3 (2)
INC	Lile		.	1
INC	Crac	.	.	2
INC	Hyoc		.	1
INC	Aspu		.	1
DEC	Hebo		.	1
	Litter	⊠⊠⊠▨▨:.		
	Rock	⊔		
	Bare Ground	⊠:·		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
SIMP		:·			:·						
~~[illegible]~~		⊠.				:·		:·	:·		
Chvi	.				.						
Artr		⊠			⊠						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-12 Vegetation Type Sagebrush

Location: T 25 R 99W S 8 1/4 1/4 S SE/NE Date 7/14/75

Slope 0° Aspect 0° Elevation 6820'

Field Analyst(s) DAK Pace Interval 4

QA Check RPm 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 8

Current Trend ↑ U

Soil Stability

Current Erosion 3U

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	::	. :	6
DEC	Agtr	⊠.	⊠ 1:	26 (20)
INC	Popr		.	1
DEC	Agsm		.	1
INC	Pose		.	1
INC	Sihy		⊔	7
DEC	Elci	::	⊠	13 (10)
INV	Brte		⊠ ::	13
INC	Toof		1:	5 (2)
INC	Phfl		.	1
INC	Melo		.	1
INC	Chfr 2		⊠ ⊔	17 (2)
INC	Urdi		::	2
INC	Siam		:.	3
INV	Trdu		.	1
INC	Acla		:	2
	Litter	⊠⊠⊠⊠⊠⊠⊠⊔		
	Rock	.		
	Bare Ground	:.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		.			.						
Chna		⊠			⊔			:			
Artr		⊠ :.			::	:		⊔			

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-13 Vegetation Type Pinyon Juniper

Location: T 25 R 99W S 8 1/4 1/4 S NE/NE Date 7/15/75

Slope 8° Aspect 150° Elevation 7100'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↓ D

Soil Stability

Current Erosion 13

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	: .	⊠⊠⊠ ·	34 (20)
INC	Stco		L	6
DEC	Orhy	: .	⊔	10
INC	Sihy		:	3
INC	Erlo		⁞	5
INC	Crse	.	:	5
INC	Hamu		⊠⊠⊔	28 (5)
INC	Mare		⊔	7 (5)
INC	Phfl		·	1
INC	Asdi		·	1
	Litter	⊠ L		
	Rock	⊠ L		
	Bare Ground	⊠⊠⊠⊠⊠⊠ ·		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Como	:	L	:			⁞	⁞		·		
Juos		·	-					:			
Pied	:	L			:			⁞	·		
SYMP	:				:						
~~Amal~~		·					·				
Cano		·			·						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-14 Vegetation Type Sagebrush

Location: T 25 R 99W S 7 1/4 1/4 S NE/SE Date 7/15/75

Slope 2° Aspect 140° Elevation 7340'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 11

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Kocr	.	.	3
DEC	Orhy	.	⊠	10
DEC	Stco		⁘	3
DEC	Arsm	⁘	⊠⊠	22 (20)
INC	Pose		⁘	4
DEC	Tray		.	1
INC	Siky	⁘	⊠	9
INC	Caac		⁘	4
INC	Spto 2		⊠	9 (5)
INC	Phlo	.	⁘	3
INC	Ipaa		⁘	4
DEC	Hebo		.	1
INC	Crse		⁘	4
INC	Asdi		.	1
INV	Brte	⁘	⊠⊔	19
INC	Coum	.		1
INC	Aspu		.	1
INC	Semu 2		.	1
	Litter	⊠⊠⁘		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⁘		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	.	⊠⊔	⁘	⁘	⊠□	⁘					⁘

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-15 Vegetation Type Pinyon Juniper

Location: T 2S R 99W S 7 1/4 1/4 S SW | SE Date 7/15/75

Slope 12° Aspect 140° Elevation 7400'

Field Analyst(s) DAK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 2

Current Trend ↓ D

Soil Stability

Current Erosion 10

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy		⊠	9
DEC	Agtr		⊠⊠□	28 (20)
INC	Cage		:	2
INC	Sihy		L:	6
DEC	Agsm		::	3
INC	HYMEN		::	4
INC	Ipac		□	8 (5)
INC	ANTEN		⁞:	5
INC	Stco 3		::	4
INC	Crse		⁞:	5
INC	Phfl		⊠	10 (5)
INC	ARABI		.	1
INC	Chdo		.	1
INC	Aspu		.	1
INC	Aggl		:	2
INV	Sial		.	1
INV	Brte		::	5
INC	Mare		:.	3
INC	Spco 3		:	2

Litter	⊠
Rock	⊠
Bare Ground	⊠⊠⊠⊠⊠⊠⊠⊠

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pied	.	⊠			:			⊠			
Putr		:					:				
Quga	.						.				
Juo.		⁞:	.		:.			:.			
Covi	.		.		:						
Crmo		:.					.	:			

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-16 Vegetation Type Sagebrush

Location: T 25 R 99W S 8 1/4 1/4 S NW|NW Date 7/15/75

Slope 2° Aspect 280° Elevation 7460

Field Analyst(s) DAK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↓ D

Soil Stability

Current Erosion 16

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Kocr	⁘	⁘	3
INC	Pose	⁘	□	10 (5)
DEC	Agsm	⊔	⊠⊠□	35 (20)
INC	Cage		⁘	6
DEC	Trgy	⁘	⊠	12 (5)
DEC	Hebo	⁘	⁘	5
INC	Spco 2		⁘	6 (5)
INC	Ph lo	⁘	⁘	5
INC	ASTRA		⁘	1
INC	Aspu		⁘	1
INC	Ipag		⊠	10 (5)
INC	Erlo	⁘		1
DEC	Cach 3		⁘	2
INC	Croc		⁘	1
INC	Asdi		⁘	1
INC	CAMPA		⁘	1
	Litter	⊠⊠⁘		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Chvi	⁘	⁘			⊠						
Artr		⊠⁘	⁘		⊠	⁘					

RBOSP

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-17 Vegetation Type Mixed Brush

Location: T 2S R 99W S 7 1/4 1/4 S NW/NE Date 7/15/75

Slope 3° Aspect 280° Elevation 7400'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend → 5

Soil Stability

Current Erosion 29

Current Trend → 5

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	SYCO		•	1
DEC	KOCR	•	⁞•	6
DEC	AGSPI		⁚	2
INC	POA sp.		•	1
DEC	AGTR		•	1
DEC	ORHY	•	⁞•	6
DEC	FEAR		⁚	2
INC	POSE	L	⁘	10 (5)
DEC	AGSM	⁚	⊠⁚	17
INC	SIHY	⁚	⁚	5
DEC	TRGY	•	⁚	3
INC	CODE	•	⊔	8
INC	MEBA 2	•	⊠	11 (2)
INC	CRAS		⁘	3 (2)
INC	ERLO		⁚	2
INC	PHLO	⁚	•	3
INC	PHLO	•	•	2
INC	LUCA		⁞•	5
INC	AGGL		•	1
INC	BRSA	⁚	⁚	4
INV	TRDU		•	1
INC	TAOF		•	1
INC	ANTEN		•	1
INC	COUM	•	•	2
INC	FRAV		•	1
	Litter	⊠⊠⊠⊠L		
	Rock			
	Bare Ground	⊠⊠⊠•		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
~~ARTR~~		⊠L	•				•	⁘	⁞•	L	⁚
ARTR		⁘	•		⁞•	•					
CHVI	•	⁚			⁘						

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ECI

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-17

RDM 9/16/75

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Cagu			1

BROWSE CONDITION

Species	Age Class				Form Class						
	Young	Mature	Decadent	Dead	1	2	3	4	5	6	Unavailable

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-18 Vegetation Type Sagebrush

Location: T 2S R 99W S 4 1/4 1/4 S NE/NW Date 7/17/75

Slope 3° Aspect 320° Elevation 7000'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend → S

Soil Stability

Current Erosion 27

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco		⁘	4
DEC	Orby	⁚	⁘	7
DEC	Feat		⁚	3
DEC	Agtr		.	1
DEC	Pote	.	⁚	4
DEC	Agsm	⁚	⊠⊠⊠	31 (20)
INC	Pose		⁘	4
INC	Siby	⁘	⁘	8
INC	Cage		⁚	2
INC	Spco 2	⁚	⁘	6 (5)
INC	Phho		⁚	2
INC	Phfl		⁚	2
INC	Crse	⁚	⊠⊠	22 (5)
INC	Asdi		.	1
INC	Semu 2		.	1
INC	Erlo		.	1
INC	DESCU		.	1

Litter	⊠⊠⊠⁘
Rock	
Bare Ground	⊠⊠⊠⊠⊠⁚

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠ 4	L		⊠⊠						
Chvi	.	.			⁚						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-19 Vegetation Type Sagebrush

Location: T 2S R 99W S 5 1/4 1/4 S SW/SW Date 7/17/75

Slope 7° Aspect 330° Elevation 9340'

Field Analyst(s) DAK Pace Interval 4

QA Check rom 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 17

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy		:	2
DEC	Stco	::	⊠	12
DEC	Kocr	:	::	5
DEC	Agtr		:.	3
DEC	Pofe		:	2
DEC	Agsm	:	⊠	12
INC	Dose	.		1
DEC	Trgy	.	□	9 (5)
INC	Phfl		:	2
INC	HYMEN		::	4
INC	Coum	:.	1:	8 (5)
INC	Hanu	.	.	2
INC	Ipac		1:	5
INC	Hyad	.	1:	6 (5)
INC	Lile		:.	3
INC	Phlo		.	1
INV	Brte		.	1
INC	Luca	.	L:	7
INC	Crac		.	1
INC	Crse		.	1
DEC	Hebo	:.	:.	6
INC	Erar		.	1
INC	Semu 2		.	1
INV?	unknown		:	2
INC	Chau		.	1
	Litter	⊠⊠L		
	Rock	⊠		
	Bare Ground	⊠⊠⊠⊠L		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
[illegible]		L				:.	:.		.		
SYMPH	.				.						
[illegible]		:.						:.			
Artr		⊠	.		⊠						
Chvi	.				.						
Putr		:.				:	.				

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-19

RDM 9/16/75

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Eral			1
DEC	Cach 3			1

BROWSE CONDITION

Species	Age Class				Form Class						
	Young	Mature	Decadent	Dead	1	2	3	4	5	6	Unavailable

File No. C.1.1.1

Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-20 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 33 1/4 1/4 S NE/SW Date 7/17/85

Slope 7° Aspect 75° Elevation 6960'

Field Analyst(s) DAK Pace Interval <1

QA Check Rom 9/16/85 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↓ D

Soil Stability

Current Erosion 13

Current Trend ↓ D

COMPOSITION

Classification		Species	Hits	Tally	Total
	DEC	Orhy		⊠⊡	15
	DEC	Kocr	.		1
	DEC	Fear		⁚	2
	DEC	Agtr	.	⊔	8
	INC	Pose	.	.	2
	INC	Sihy	⁚	⁚	8
	DEC	Agsm		⁚	<1
	INC	Erov	.	⁚	3
	INC	Erum	⁚	⊔	10 (5)
	INC	Chtr2		.	2
	INC	Hanu	.	⁚	5
	INC	Soco2		⊡	6 (5)
	INC	PHFI		⊠	11 (5)
	INV	Brte	.	.	2
	INC	Erio		⁚	3
	INC	Crse		⁚	3
inv?	INC	~~HAVA~~ unknown		⁚	<1
	INC	Acli		⁚	2
	INC	LITH		⁚	2
	INC	Semu2		.	1
	INC	Phho	.	⁚	4 5
	INC	ASTRA		.	1
	INC	ARABI		.	1
		Litter	⊠⊠⊠⊠⊔		
		Rock			
		Bare Ground	⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos		⁚	⁚					⁚			.
SYMPH	⁚	.			⁚	.					
Cern		⁚				.	⁚				
Arir		⊔			⊔						
~~Arts~~		⁚	.			-	⁚				
Tero	⁚			--	⁚						
Pied											

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK.21 Vegetation Type Sagebrush

Location: T 15 R 99W S 24 1/4 1/4 SW/NE Date 7/17/75

Slope 1° Aspect 45° Elevation 6600'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↓ D

Soil Stability

Current Erosion 19

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco	⊠.	⊠⊠⊠	41 (15)
DEC	Orhy	.	⊠⊠:	17
DEC	Agsm		.	1
INC	Sihy		.	1
INC	Hanu		⊠:.	13 (5)
INC	Phfl		:.	3
INC	Phho	:.	⊠:.	15 (5)
INC	Saco2		:.	3
DEC	Hebo	.		1
INV	Saka		.	1
INC	Mela 2		.	1
INC	ANTEN		.	1
INC	Aspu	.		1
INC	Phmu		.	1
	Litter	⊠:.		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠:.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Arfr		⊠⊠:	:.	:.	⊠⊠.						:.
Teca		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-22 Vegetation Type Sagebrush

Location: T 15 R 99W S 13 1/4 1/4 S NE/NW Date 9/17/75

Slope 0° Aspect 0° Elevation 6480'

Field Analyst(s) DAK Pace Interval 4

QA Check RBM 9/14/75

CONDITION AND TREND RATING

Vegetation

Vigor 3

Current Trend -> S

Soil Stability

Current Erosion 23

Current Trend V D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco	1:	⊠⊠.	26 (15)
DEC	Kogr	.		1
DEC	Pofe		.	1
DEC	Orhy	:		2
DEC	Agsm	1.	⊠⊠⊠::	39 (20)
INC	Sihy		::	3
INC	Cag-	.	L:	7
INC	Pase		L:	6 (5)
INC	Opfr	:	.	3 (2)
INC	Phlo		.	1
INV	Brte		:	2
INC	Spco 2	.	::	4
INC	Phho		::	3
INC	PENST		.	1
INV	Sial		.	1
	Litter	⊠.		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠⊠:	::		⊠⊠						

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-23 Vegetation Type Pinyon Juniper

Location: T 25 R 99W S 5 1/4 1/4 S NE/NW Date 7/17/75

Slope 22° Aspect 140° Elevation 7300'

Field Analyst(s) DAK Pace Interval 4

QA Check DM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend → S

Soil Stability

Current Erosion 12

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	⊠⊠⊠::		37 (20)
DEC	Agtr	⊠□		26 (20)
INC	Sihy	1:		5
DEC	Agsm	-	:	3
INC	Spco2		:.	3
INC	Erum		⊠:	12 (5)
INC	Hanu	.	⊠.	12 (5)
INC	Crse		:	2
	Litter	⊠⊠		
	Rock	⊠:		
	Bare Ground	⊠⊠⊠⊠⊠::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
SYMPH		:.			.	:					
Cemo		1:				.			::	.	
Chna		:.			:.						
Arco		1:			1:						.
Juos			⊠:					::			.
Artr		::			::						

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-24 Vegetation Type Pinyon Juniper

Location: T 15 R 98W S 20 1/4 1/4 S SW/NE Date 7/18/75

Slope 0° Aspect 0° Elevation 6509'

Field Analyst(s) DAK Pace Interval 7

QA Check NAm 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 13

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	:	⊔	9
DEC	Agtr	:	⊠ ⁚	16
DEC	Stco		⁚	3
DEC	Koci		·	1
INC	Agsp		·	1
DEC	Agsm	:	⁚	6
INC	Phho		⊠	10 (5)
INC	Phfl		⊠	10 (5)
INC	Hain		⁚	4
INC	Phlo		⊔·	6 (5)
INV	Saka		1·	6
INC	Chdo		□	8 (5)
INC	Aspu	·		1
INC	Asdi		⁚·	4
INC	Crse		⊔·	6 (5)
INC	CHAEN	·	⁚	3
INC	Semu 2		⁚·	3
INC	Ipag		·	1
INC	Coon 2		·	1
INC	SiSYM		·	1
	Litter	⊔		
	Rock	⊠		
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠ 1:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos		:·	⊠⊠:·		:·			⊠⁚			

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-25 Vegetation Type Sagebrush

Location: T 15 R 98W S 20 1/4 1/4 S NE/NW Date 7/18/75

Slope 0° Aspect 0° Elevation 6500'

Field Analyst(s) DAK Pace Interval 4

QA Check Nam 7/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend → S

Soil Stability

Current Erosion 20

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orby	⁘	⊡	11
DEC	Pofe		⁘	3
DEC	Stco	⊡	⊠⊠⊠	38 (15)
DEC	Kocr		⁘	5
INC	Coge		⁘	3
INC	Pose		⁘	2
DEC	Agsm		⊠	9
INC	Sibi		⁘	3
INV	Saka	·	⁘	3
INC	Phho		⁘	2
INC	Hanu		⁘	3
INC	Opfr		⁘	3 (2)
INC	Semu2		⁘	3
INC	Ascl		⁘	2
INC	Ipag		·	1
INC	Phmu		·	1
DEC	Hebo	·	·	2
INV	Sial	·		1
INC	Erov		·	1
INC	ASTER	·		1
INV	Brte		·	1
INC	Haal		·	1
INC	Erlo		·	1
	Litter	⊠⁘		
	Rock	⁘		
	Bare Ground	⊠⊠⊠⊠⊠4		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊡⁘	1⁘		⊠⊠·						
Sivi	⁘				⁘						
Chvi		⁘			⁘						

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-26 Vegetation Type Pinyon Juniper

Location: T 15 R 98W S 18 1/4 1/4 S SW/SW Date 7/18/75

Slope 3° Aspect 90° Elevation 6520'

Field Analyst(s) DAK Pace Interval 4

QA Check Adm 9/11/75

CONDITION AND TREND RATING

Vegetation		Soil Stability	
Vigor	2	Current Erosion	11
Current Trend	↓ D	Current Trend	↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy		⊠::	14
DEC	Stco		::	4
INC	Agtr		1:	5
DEC	Acam		.	1
INC	Bogr		.	1
INC	ARIST		⊠1:	15 (5)
INC	PENST		.	1
INC	Erla	:	⊠1:	17
INC	Crse		::	4
INC	CHAEN	,	⊠⊠:	25 (5)
NC	Aggl		::	4
INC	Phho		.	1
INC	Semo 2		::	4
INC	Erov		.	1
INC	Hamu		.	1
INC	Anse		.	1
INV	Soka		.	1
INC	ERIGE		.	1
INC	Inor		.	1
	Litter	:·		
	Rock	⊠		
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠⊠1:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
China	:	⊠	.		⊠:						
Putr		:				.	:				
Artr		1:			1:						
Juos		.	.:					1:			
Chvi		.			.						

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-27 Vegetation Type Sagebrush

Location: T 1S R 98W S 17 1/4 1/4 S NE/SW Date 7/18/75

Slope 0° Aspect 0° Elevation 1,460'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend → S

Soil Stability

Current Erosion 1/

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco	⊔	⊠⊔	24 (15)
DEC	Orhy	:	⊠1:	17
DEC	Agsm	:	⊠L·	18
INC	Sihy		:	2
INC	Boer		·	1
INC	Aspu		·	1
INC	Hanu		::	4
INC	Phho	·	⊠·	12 (5)
INC	Aggl		:	2
INC	Spco 2		·	1
INV	CRUIC		·	1
INC	Crse		:	2
INC	Phfl		:	2
INC	Erlo		·	1
DEC	Hebo	·	::	5
INC	Erov		:	2
INC	Oofr		·	1
INC	Asri		:	2
INC	LEPTO		·	1
INC	Semu 2		·	1
	Litter	⊠·		
	Rock	⊠		
	Bare Ground	⊠⊠⊠⊠⊠⊠L·		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠L·	::	·	⊠⊠						·
Chna		:		·	:						·
Chvi		·			·						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-28 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 13 1/4 1/4 S NE/NE Date 9/8/75

Slope 3° Aspect 80° Elevation 6529'

Field Analyst(s) DAK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↓ D

Soil Stability

Current Erosion 20

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	.	⊠:	13
INC	Cage		:.	3
INC	Pose		:	2
INC	Siby		::	4
DEC	Hebo		.	1
INV	CRUIC		:	2
INC	Erum		.	1
INC	CHAEN		⊠1:	15 (5)
INC	Aspu		..	2
INC	Semu2		⊠.	11 (5)
INC	Phho		⊠	9 (5)
INC	Hanu	.	1:	6 (5)
INC	Erov		□	8
INC	Opfr	.	:.	4 (2)
INC	Phfl		□	8 (5)
INC	Phmu		..	2
INC	Asdi		..	2
INC	Crse	.	L:	7 (5)

Litter	⊠⊠⊠
Rock	:
Bare Ground	⊠⊠⊠⊠⊠⊠1:

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Jvo:		⊠.	⊠		⊠⊠.						
Artr		:			:						
Chna		.			.						
Putr		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-29 Vegetation Type Mixed Brush

Location: T 15 R 99W S 32 1/4 1/4 S NW SE Date 7/20/79

Slope 6° Aspect 320° Elevation 7160'

Field Analyst(s) DAK Pace Interval 4

QA Check JPM 9/6/79

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend ↑

Soil Stability

Current Erosion 27

Current Trend ↑

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr		:	2
DEC	Stco	1:	⊠·⊠	26 (15)
DEC	Orhy	⊔	⊠.	18
DEC	Feat		L	6
DEC	Pote		:	2
DEC	Kocr		.	1
INC	Sihy	:·	::	7
INC	Pose		:	2
INC	Cage		1:	5
DEC	Agsm	.	.	2
INC	Erov	:	::	6
INC	Ipag		:	2
INC	ERIGE	:	L	8 (5)
INC	Semu 2		.	1
INC	Peca		.	1
INC	Crac	:	::	5 (2)
INC	Bosa	:		2
INC	Acdi		.	1
INC	Coum	.		1
DEC	Cach 3		.	1
INC	Crse		.	1
	Litter	⊠⊠⊠⊔		
	Rock	:		
	Bare Ground	⊠⊠⊠L		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	:	L	,		⊔						.
Crmg	:	⊠:			.	.	⊠:			.	
SIRIPA	:	.			:·						

ECI

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-30 Vegetation Type Sagebrush

Location: T 15 R 99W S 32 1/4 1/4 S SW/SW Date 7/20/75

Slope 2° Aspect 90° Elevation 7380'

Field Analyst(s) DAK Pace Interval 4

QA Check DM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend ↑ ↓

Soil Stability

Current Erosion 27

Current Trend ↑ ↓

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	⁘	⊠⁘	17
Dec	Kocr	·		1
DEC	Stco	⁘	⁘	6
DEC	Agsm	⊠	⊠⊠⊠ ⊔	48 (20
INC	Pose		⁘	3
DEC	Eula		⁘	2
INC	Siby	⊔	⊔·	13
INV	Brte	·	⁘	4
INC	Aspu		·	1
INC	Peca		⁘	4
INV	Sial		·	1
	Litter	⊠⊠⊠		
	Rock			
	Bare Ground	⊠⊠⊠⊠⁘		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	⁘	⊔		⊔·	⊠						⊔·
Arvi	⁘	⁘			⊠⁘						
Cem			⁘							⁘	
Tetr	·	⁘			⁘						

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File No. C.J.I.1

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-31 Vegetation Type Mixed Brush

Location: T 15 R 99W S 31 1/4 1/4 S NE/SW Date 7/20/75

Slope 12° Aspect 270° Elevation 7580'

Field Analyst(s) DAK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ U

Soil Stability

Current Erosion 28

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy		:	2
DEC	Kocr		:.	3
	Agspi		:.	3
DEC	Pofe	..	::	6
DEC	Fear	.	L	8
DEC	Stco	::	⊠ 1:	19 (15)
DEC	Agsm	:		2
INC	Pose		1:	5
INC	Peca	.	.	2
INC	ERIGE		1:	5
INC	Asdi		L.	6 (5)
INC	Crac.	.	.	2
INC	Luca	L.	L.	12 (7)
INC	Phmo	::	::	8 (5)
INC	Anse	.		1
INC	Mela 2		::	4 (2)
INC	Cagu		::	3 (2)
INC	Erov		::	3
INC	Aspu	.	::	4
INC	Spco 2		.	1
INC	Acla		.	1
	Litter	⊠⊠⊠⊠		
	Rock	:.		
	Bare Ground	⊠⊠⊠:.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
SYMPH		1:			1:						
Cerco		H					::			::	
Artr	.	::	.	.	1:						.
Chvi	.	.			:						
~~Amot~~		1:					1:				

File No. C.1.1.1

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-32 Vegetation Type Pinyon Juniper

Location: T 25 R 100W S 1 1/4 1/4 S SE/SE Date 7/20/95

Slope 31° Aspect 155° Elevation 7600'

Field Analyst(s) DAK Pace Interval 4

QA Check RBM 9/16/95

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 14

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	1:	⊠⊠⊠⊠	41 (20)
DEC	Orhy	:.	⊠⊠::	27 (20
INC	Siby		.	1
INC	Chfr2		..	2
INV	Brte	.	⊠ 11	18
INC	Eral		.	1
INC	ERIGE		1:	5
INC	Phfl		.	1
INC	Crse		.	1
	Litter	⊠ 1:		
	Rock	⊠⊠ 1:		
	Bare Ground	⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos		1:	1:					2			1:
Pied		:	:			.		:			:
Putr		:.					:.				
Artr		:.	.	.	::						..
Chno		:			:						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-33 Vegetation Type Mixed Brush

Location: T 2S R 100W S 1 1/4 1/4 S NE/SE Date 7/20/75

Slope 12° Aspect 340° Elevation 7500

Field Analyst(s) DAK Pace Interval 4

QA Check Tom 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend ↑ U

Soil Stability

Current Erosion 31

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	.	::	4
DEC	Kocr	.	::	5
DEC	Agsp		::	5
DEC	Orhy	☐	☒ U	25 (20)
DEC	Stco	:	:	4
DEC	Agsm	::	L	11
INC	Pose		.	1
INC	Cage		.	1
INV	Brte	.		1
INC	Coum	-	☒	10 (5)
INC	ERIGE		::	4
INC	Crac		.	1
INC	Acln	.	:	3 (2)
DEC	Hebo	:	::	6
INC	Peca		:	2
INC	ARABI	.		1
INC	Spco 2		.	1
INC	Mare		:	2
INC	Phlo	.		1
INC	Erov	:	.	3
INC	Ipag		.	1
INC	Lyca		U	7
DEC	Cach 3		.	1
	Litter	☒☒☒☒:		
	Rock	,		
	Bare Ground	☒☒☒'		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Cemo		☒.	.							☒:	
Chvi		:			:						
Artr		::			::						
SYMPH	.				.						
Teca		.			.						
Amal		::					::				

FROM FIELD NOTES REPORT

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-34 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 27 1/4 1/4 S SE/SW Date 7/20/75

Slope 7° Aspect 80° Elevation 9020'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend →

Soil Stability

Current Erosion 20

Current Trend →

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Fear	:	1:	7
DEC	Agtr	:	⊠.	13
DEC	Orhy	:	⊠⊠:	24 (20)
DEC	Stco		⊠	10
DEC	Pofe		:·	3
? DEC	Agspi		:.	3
INC	Sihy	::	⊠:	16
INC	Pose		:·	3
INC	Cage		.	1
INC	Crse		□	8 (5)
INC	Aspu		:	2
INC	Chfr 2	.	:·	4 (2)
INC	Asdi		.	1
INC	ARABI		.	1
INC	Semu2		:	2
INC	Hanu		.	1
INC	Phfl		.	1
	Litter	⊠⊠⊠ | :		
	Rock	⊠ L·		
	Bare Ground	⊠⊠⊠□		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos		:	⊠					⊠.			-
Cemo	:	:·	:				L			.	
Pied			::					:			:
SYMPH	:				:						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-33 Vegetation Type Mixed Brush

Location: T 2S R 100W S 1 1/4 1/4 S NE/SE Date 7/20/75

Slope 12° Aspect 340° Elevation 7500

Field Analyst(s) DAK Pace Interval 4

QA Check KM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend ↑ U

Soil Stability

Current Erosion 31

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	.	::	4
DEC	Kocr	.	::	5
DEC	Agspi		::	5
DEC	Orhy	□	⊠U	25 (20)
DEC	Stco	:	:	4
DEC	Agsm	::	::	11
INC	Pose		.	1
INC	Cace		.	1
INV	Brte	.		1
INC	Coum	-	⊠	10 (5)
INC	ERIGE		::	4
INC	Crac		.	1
INC	Acla	.	:	3 (2)
DEC	Hebo	:	::	6
INC	Peca		:	2
INC	ARABI	.		1
INC	Spco 2		.	1
INC	Mare		:	2
INC	Phlo	.		1
INC	Erov	:	.	3
INC	Ipag		.	1
INC	Lyca		U	7
DEC	Cach 3		.	1
	Litter	⊠⊠⊠⊠:		
	Rock	,		
	Bare Ground	⊠⊠⊠'		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Cemo		⊠.	.							⊠:	
Chvi		:			:						
Artr		::			::						
SYMPH	.				.						
Ieca		.			.						
Amal		::					::				

FIELD PROCESS REPORT

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-34 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 27 1/4 1/4 S SE/SW Date 7/20/75

Slope 7° Aspect 80° Elevation 7020'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend →

Soil Stability

Current Erosion 20

Current Trend →

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Fear	:	1:	7
DEC	Agtr	:	⊠.	13
DEC	Orhy	:	⊠⊠:	24 (20)
DEC	Stco		⊠	10
DEC	Pofe		::	3
? DEC	Agspi		:.	3
INC	Sihy	::	⊠:	16
INC	Pose		::	3
INC	Cage		.	1
INC	Crse		□	8 (5)
INC	Aspu		:	2
INC	Chfr 2	.	:.	4 (2)
INC	Asdi		.	1
INC	ARABI		.	1
INC	Semu2		:	2
INC	Hagu		.	1
INC	Phfl		.	1

Litter	⊠⊠⊠|:
Rock	⊠ L:
Bare Ground	⊠⊠⊠□

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos		:	⊠					⊠.			-
Cemo	:	::	:				L			.	
Pied			::					:			:
SYMPH	:				:						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-85 Vegetation Type Sagebrush
Location: T 15 R 99W S 14 1/4 1/4 S SW/SW Date 7/21/75
Slope 2° Aspect 30° Elevation 6760'
Field Analyst(s) DAK Pace Interval 4
QA Check ROM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend → S

Soil Stability

Current Erosion 19
Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr		.	1
DEC	Stco	⊔	⊠⊠.	28 (15)
DEC	Orhy		⊠:	12
DEC	Agsoi		.	1
DEC	Feat		.	1
DEC	Kocr		:.	3
DEC	Agsm	::	⊠1:	19
INC	Sihy		:.	3
INC	Pose		:	2
INC	Bogr		:.	3
INC	Lare		:.	3
INC	Crse		1:	5
INV	CRUIC		.	1
INC	Chfr2		:.	3 (2)
INV	Brte		.	1
INC	Phho	::	L.	10 (5)
INV	Eufe		.	1
INC	Phlo		.	1
DEC	Hebo		.	1
INC	Hanu		.	1
	Litter		⊠⊠.	
	Rock		:.	
	Bare Ground		⊠⊠⊠⊠⊠⊠	

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠1:	□	:	⊠:	.					:

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-36 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 14 1/4 1/4 S SW|SW Date 7/21/75

Slope 7° Aspect 110° Elevation 6780'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 14

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	L	⊠⊠⊠	36 (20)
DEC	Orhy		⊠⊠	20
INC	Sihy		.	1
INC	Hamu		⊠:	13 (5)
INC	Crse		L	6 (5)
INC	Phho		::	3
INC	Aspu		.	1
INV	Eufe	:	⊠⊔	19
INC	Phfl		.	1
	Litter	⊠		
	Rock	⊠ L		
	Bare Ground	⊠⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Cemo		□		:			⊔			.	:
Putr		:				⊠.					
Juos		⊠.	.		⊔			:			:.
Pied		.						.			

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-37 Vegetation Type Pinyon Juniper
Location: T 1S R 99W S 23 1/4 1/4 S SE/NW Date 9/21/75
Slope 3° Aspect 330° Elevation 6760'
Field Analyst(s) DAK Pace Interval 4
QA Check Rom 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend ↓

Soil Stability

Current Erosion 17
Current Trend ↓

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Kocr		⊠	10
DEC	Agtr	1:	⊠⊠:	28 (20)
DEC	Feat		1:	5
DEC	Orhy		⊠	9
DEC	Stco	.	:.	4
INC	Pase		.	1
INC	Sihy		:	2
INC	Crse	.	:.	5
INC	Phfl		:.	3
INC	Phho	.	:	3
INC	Semu2	.	:	3
INC	Hanu	.	L	7 (5)
INC	Lepu		.	1
INC	Phmu	..	⊠	11 (5)
INC	ARENA	.		1
INV	Sata		.	1
DEC	Hebo		.	1
INV	Eufo	.	:	3
INC	Phlo	.		1
INC	HYME2		.	1
	Litter	⊠⊠1:		
	Rock	L		
	Bare Ground	⊠⊠⊠⊠⊠::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos		⊠	.		:			⊠			
Pied		□	.		.			□			
Art.		:.			::						
Putr		.					.				

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-38 Vegetation Type Sagebrush

Location: T 15 R 99W S 21 1/4 1/4 S SE/SE Date 7/21/75

Slope 2° Aspect 280° Elevation 7000'

Field Analyst(s) DAK Pace Interval 4

QA Check DM 9/6/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ U

Soil Stability

Current Erosion 25

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Orhy	.	⊔	8
	Agspi	.	:	3
Dec	Kocr	:.	:.	7
Dec	Stco	L:	⊠⊠:.	29 (15)
Dec	Pofe		.	1
Dec	Agtr	:	:.	4
INC	Pose	:.	⊔	10 (5)
DEC	Agsm		⊠:	12
INC	Caae		:.	3
INC	Asdi		.	1
INC	Hanu	:	:	4
INV	Brte		:.	4
INC	Spco 2		:.	3
DEC	Hebo	.	:	4
INC	Crse		:.	4
INC	Phho	.	.	2
INC	PENST		.	1
	Litter	⊠⊠⊔		
	Rock	.		
	Bare Ground	⊠⊠⊠⊠⊠:.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠⊠	1:		⊠⊠1:						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-39 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 27 1/4 1/4 S NW/NW Date 7/21/75

Slope 6° Aspect 140° Elevation 7060

Field Analyst(s) DAK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend → S

Soil Stability

Current Erosion 20

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	⊠	⊠□	27 (20
DEC	Orhy	L	⊠∴	20
DEC	Pofe	.	∴	4
DEC	Stco		⁝	5
INC	Cage		⁝	2
INC	Pose		.	1
INC	Siby		.	1
INC	Hanu		⊠⁝	12 (5)
INC	Bosa		∴	3
INC	Asdi		⁝	2
INC	Idpa		∴	4
INC	Phfr		⁝	2
INC	Aspu		⁝	2
INV	Eufe		L	6
INC	Phho	⁝	.	3
INC	Luca	.	⁝	3
INC	Semu2		∴	3

Litter	⊠⊠⊠∴
Rock	∴
Bare Ground	⊠⊠⊠⊠∴

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos		∴	⊠L					⊠			⊠
Pied		∴						∴			
Artr		∴			∴						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-40 Vegetation Type Sagebrush
Location: T 15 R 99W S 27 1/4 1/4 SSW/NW Date 7/21/75
Slope 3° Aspect 310° Elevation 6980'
Field Analyst(s) DAK Pace Interval 4
QA Check RAM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend ↑ u

Soil Stability

Current Erosion 19
Current Trend ↑ u

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco		⊠⊠⊡	29 (15
DEC	Kocr	1⁚	⊡	11
DEC	Fear		⁚	2
DEC	Pafe	·		1
DEC	Orhy		□	8
INC	Pose	⁚	·	3
INC	Sihy		⁚	2
DEC	Agsm	·	1⁚	6
DEC	Trdy		·	1
INC	Asdi		·	1
DEC	Hebo	·	⁚	3
INC	Hanu	⁚	·	3
INC	Spco2	⁚⁚	⁚	6 (5)
INC	Crac	·	⁚⁚	5 (2)
INV	CRUIC		·	1
INC	Semu2		⁚·	3
INC	Ipaq		⁚	2
INC	Chdo		·	1
INC	Aspu		⁚·	3
INC	Crse		·	1
INC	PENST		⁚	2
INC	Phho	·	⁚·	4
INC	Luca	·		1
INV	Trdu		·	1
	Litter	⊠⊠⁚		
	Rock			
	Bare Ground	⊡⊡⊠⊠⊠□		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠⊡	⁚·	⁚	⊠⊡			⁚⁚			⁚

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-41 Vegetation Type Pinyon Juniper

Location: T 15 R 99 S 20 1/4 1/4 S SW/NE Date 7/22/75

Slope 5° Aspect 320° Elevation 7040'

Field Analyst(s) DAK Pace Interval 4

QA Check RPM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ U

Soil Stability

Current Erosion 21

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco		:	2
DEC	Agtr	::	⊠⊠	23 (20
DEC	Orhy	:.	⊠⊠:	25 (20)
DEC	Feat		L:	6
? DEC	Agspi		1:	5
DEC	Kocr		::	4
DEC	Trgy		L:	6 (5)
INC	Pose	.	::	5
INC	Cage	.		1
DEC	Agsm		.	1
INC	Sihy	:	:	4
INC	Phho		L:	6 (5)
INC	Crse		:.	4
INC	Bosa		.	1
INC	Lepu		.	1
INC	Area		.	1
INC	Semu 2		.	1
INC	Luca		.	1
INC	Ipag		.	1
INC	Zive		.	1
INC	Opfr	.		1
	Litter	⊠⊠⊠⊠⊠		
	Rock	L.		
	Bare Ground	⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pied		L:	1:					L:			1:
Juos		1:	:.			.		1:			::
SYMPH		..			..						
Artr	..	.			:.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-42 Vegetation Type Sagebrush

Location: T 15 R 99W S 28 1/4 1/4 SNW/SW Date 7/22/75

Slope 2° Aspect 360° Elevation 7300'

Field Analyst(s) DAK Pace Interval 4

QA Check 9/16/75 rom

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ ls

Soil Stability

Current Erosion 18

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Actr		:	2
? DEC	Agsp i		:	2
DEC	Sfco	1:	⊠⊠:	27 (45)
DEC	Orhy		□	8
DEC	Koct	1:	⊏	12
DEC	Feat	.		1
INC	Pose	.	:	3
DEC	Trgy	.	⊠	10 (5)
DEC	Agsm	L:	⊠⊏	22 (20
DEC	Hebo		:	2
INC	Basa		.	1
INC	Crac		.	1
INC	Peca		.	1
INC	Erlo		.	1
INC	Sdco 2		.	1
INC	Asdi	.		1
INC	Aspu		.	1
INC	Ipag		.	1
INC	PENST		.	1
INC	Luca		.	1
INC	Hanu		.	1
	Litter	⊠⊠:		
	Rock	::		
	Bare Ground	⊠⊠⊠⊠⊠::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Actr		⊠⊔	:		⊠⊠						
SYMPH		:.			:.						
Chvi		:.			:.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-'13 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 21 1/4 1/4 SSW/SE Date 7/22/75

Slope 5° Aspect 120° Elevation 7110'

Field Analyst(s) DAK Pace Interval 4

QA Check Rom 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↓ D

Soil Stability

Current Erosion 16

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco		:	2
DEC	Orhy	::	⊠.	14
DEC	Agtr	.	⊠⊠:	23 (20)
DEC	Feat		L:	6
DEC	Kocr		.	1
DEC	Pote		:.	3
INC	Siby		::	4
INC	Crne	:	1:	7
DEC	Arsm		.	1
DEC	Troy		:.	3
INC	Hanu	.	□	9 (5)
INC	Erov	:	.	3
INC	Eral		.	1
INC	Crse	.	:.	3
INC	Agal		:	2
INC	Phho		L:	6 (5)
INC	Luco	.	:.	3
INC	Ipag		.	1
INC	Phld		:	1
INC	Bassi		:	2
INC	Phfl		.	1
INC	Aldu		.	1
INC	Spco 2		..	2
INC	Asdi		.	1
	Litter	⊠⊠⊠L:		
	Rock	⊠:.		
	Bare Ground	⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
[illegible]		□						□			
Juos		⊠	::			.		⊠			::
[illegible]		.					.				
[illegible]		:				.	.				.
[illegible]		.				.					

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-1141 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 28 1/4 1/4 SSW/SE Date 7/22/75

Slope 4° Aspect 140° Elevation 7200'

Field Analyst(s) DAK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend → S

Soil Stability

Current Erosion 24

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Frat	:	::	6
DEC	Shco		⊔	7
	Aaspi		⊠:.	13
DEC	Otky	::	□	11
DEC	Acgr	|:	⊠ L:	21 · (20)
INC	Pose	.	.	2
INC	Sihy		⊠ ⊔	17
INC	Cagl		□	8
DEC	Acsm	.		1
DEC	Trdy		: =	3
INC	Onte		:	2
INC	Hamu		:.	3
INC	Erlo		.	1
INC	Basa	.		1
INC	Crse		.	1
INC	Crac		.	1
INC	Erlo		.	1
INC	Phho		.	1

Litter	⊠⊠⊠L:
Rock	L:
Bare Ground	⊠⊠⊠⊠|:

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pine			:	.	:			::			
Cre...		:					.			.	
...	:	⊔			⊡						
...ds	.	|:	:	|:			::			

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-45 Vegetation Type Pinyon Juniper

Location: T 1S R 99W S 29 1/4 1/4 S SE/SW Date 7/20/75

Slope 9° Aspect 150° Elevation 7300'

Field Analyst(s) DAK Pace Interval 4

QA Check Rom 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↓ D

Soil Stability

Current Erosion 37

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	:.	⊠⊠⊠.	34 (20)
DEC	Orhy	:	⊠⊠⊠!:.	39 (20)
DEC	Sted		.	1
INC	Sihy		⊠	10
DEC	Trsy		.	1
INC	ARIABI		:	2
INC	Crse		!:	5
INC	Phfl		.	1
INC	Seini 2		.	1
INV	Eute		L:	6
INC	Chvi 2		.	1
INC	Phfl		.	1
	Litter	⊠⊠		
	Rock	::		
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Jun.		:.	:	.				L			.
Pin		:					:.				
Cerco		L		.			L				
Arte		:.						:.			
Atrip		.				.					
Bare		:.			:.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-46 Vegetation Type Sagebrush
Location: T 15 R 99W S 29 1/4 1/4 S NW/NE Date 7/23/75
Slope 1° Aspect 170 Elevation 7340'
Field Analyst(s) DAK Pace Interval 4
QA Check RM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6
Current Trend → S

Soil Stability

Current Erosion 21
Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco	::	⊠ ⊔	21 (15)
DEC	Orhy	:·	1:	8
DEC	Kocr		:	2
INC	Cage		:	2
DEC	Tray	·	1:	6 (5)
DEC	Aasth	:	⊔	9
INC	Phco	:·	·	4
INC	Ipar		⊔	7 (5)
INC	Sphe 2		:	2
INC	Erla		:·	3
INC	Coum	·	□	9 (5)
INC	DENST		·	1
INC	Frav		·	1
INC	Mela 2	·	·	2
INC	Luco		::	4
INV	Brte		::	4
INC	Chdo		·	1
INC	Semu 2		:·	3
INC	Pehe	:		2
DEC	Hebo	::		4
INC	Phil		·	1
INC	Thfe		·	1
INC	Pore		·	1
INC	Lile		·	1
INC	Prla		·	1
	Litter	⊠⊠·		
	Rock	⊠·		
	Bare Ground	⊠⊠⊠⊠:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Al Fr		⊠1:			⊠1:						·
Chvi		:			:	·					
~~Amelanch~~		·								·	
Ribe		L·					L·				·

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-47 Vegetation Type Greasewood

Location: T 15 R 98W S 7 1/4 1/4 S NE/SW Date 7/23/75

Slope 1° Aspect 80° Elevation 6380'

Field Analyst(s) DAK Pace Interval 4

QA Check RMM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend → S

Soil Stability

Current Erosion 29

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Pofe	.	.	2
DEC	Aospi		1:	5
DEC	Agtr		.	1
DEC	Atca	1;	⊠⊠⊠⊠□	53 (20)
DEC	Glci		1:	5
INV	CHEVO	:.	⊠⊠□	31
INC	Tpcu		.	1
INC	Asdi		.	1
INC	Lepu		.	1
	Litter	⊠⊠⊠⊠⊠□		
	Rock			
	Bare Ground	⊠⊠⊠:.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Sa		⊠U			⊠U						
[illegible]		□			□						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-48 Vegetation Type Sagebrush

Location: T 1S R 98W S 8 1/4 1/4 S SWINE Date 7/23/75

Slope 2° Aspect 200° Elevation 6300'

Field Analyst(s) DAK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 32

Current Trend ↓ P

COMPOSITION

Classification	Species	Hits	Tally	Total
? Dec	Agspi		⊠	10
DEC	Orhy	·	:	4
DEC	Elci	□	⊠⊠⊠	38 (10)
INV	CHENO	::	⊠⊠⊠⊠	43
INC	Semu 2		..	2
INC	Arfr		.	1
INV	Brte		:	2
	Litter	⊠⊠⊠⊠⊠·		
	Rock			
	Bare Ground	⊠⊠⊠U		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠			⊠						
Chna		□			□						
Atco		::			..	.					
Save		::			::						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-49 Vegetation Type Sagebrush

Location: T 15 R 99W S 15 1/4 1/4 S NW/NE Date 7/23/75

Slope 2° Aspect 340° Elevation 6640'

Field Analyst(s) DAK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 3

Current Trend ↓ D

Soil Stability

Current Erosion 9

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy		::	3
? DEC	Agspi		☐	8
DEC	Kocr	.		1
INC	Agtr		.	1
DEC	Agsm		☒	10
INV	Brte	::	☒☒☒☒	51
INC	Ipco		:	1
INC	Lare		:	2
INC	Ipag		.	1
INV	CHENO		☒☐	18
INV	CRUIC	.	:	3
INC	PENST		.	1
	Litter		☒☒:	
	Rock			
	Bare Ground		☒☒☒☒☒☒	

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	::	☒:		.	☒:						.
SAVE		☐			☐	.					

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-50 Vegetation Type Sagebrush (Bottom)

Location: T 2S R 100W S 12 1/4 1/4 S NW ISE Date 7/24/75

Slope 2° Aspect 50° Elevation 7480'

Field Analyst(s) DAIC Pace Interval 2

QA Check RDM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ U

Soil Stability

Current Erosion 30

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Feat		.	1
DEC	Orhy		𝍸	7
DEC	Agtr	:	⊠:	14
INC	Stvi	1:	⊠:	17 (5)
INC	Popr	:	:	2
DEC	Agspi	.	::	4
DEC	Agsm	𝍸	⊠:	19
DEC	Bram		::	4
DEC	Viam		.	1
DEC	Sici		:	2
INC	Tach	::	𝍸	12 (2)
INC	Luca		𝍸:	6
INC	GERAN		:	2
INC	Acla	.	.	2
INC	Mela 2	.		1
INC	Coum		.	1
INC	Spco 2		:	2
INC	Cagu		.	1
	Litter	⊠⊠⊠⊠⊠⊠⊠:'		
	Rock			
	Bare Ground	::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠			⊠						
Chvi		::			::						
SYMPH		⊠			⊠						
Atco		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-S1 Vegetation Type Mixed Brush
Location: T 2S R 100W S 12 1/4 1/4 S SE/NE Date 7/24/75
Slope 12° Aspect 310° Elevation 7500'
Field Analyst(s) DAK Pace Interval 4
QA Check RM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend ↓ D

Soil Stability

Current Erosion 18
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Feam	:	L	8
DEC	Agsp		L	6
DEC	Pofe		L	6
DEC	Kocr	:	:	5
DEC	Trgy	::	⊠	13 (5)
INC	Sihy		:	2
INC	Cage		:.	3
INC	Pose		:	2
INC	Luca	::	I:	9 (7)
INC	Crac		::	4 (2)
INC	Phho	⊠	::	13 (8)
INC	Mela 2		:	3 (2)
INC	Acla		.	1
INC	Peco	.	L	5 (5)
DEC	Hebo	:	:	4
INC	Cagu		..	7
INC	Ipdg		.	1
INC	Hyac		:	2
INC	GERAN			1
INC	Erov	:	:	2
INC	Basa		.	1
INV	STELL		.	1
INC	Arca		.	1
INC	Tact		.	1
INC	Aspu	.		1
	Litter	⊠⊠⊠⊠:		
	Rock			
	Bare Ground	⊠⊠⊠:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
AMALA		⊠					⊠			:	
Chvi		::			:.						
Artr	:	L:			⊡						
Teca		..			..						
SYMPH		..			..						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-52 Vegetation Type Sagebrush

Location: T 2S R 100W S 12 1/4 1/4 S SW/NW Date 7/24/75

Slope 1° Aspect 50° Elevation 7440'

Field Analyst(s) DAK Pace Interval 2

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ U

Soil Stability

Current Erosion 32

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	U	⊠⊠	26 (20)
INC	Popr		⊠	10
DEC	Orhy		⁞	5
DEC	Stco		⁚	4
INC	Sihy		⁝	2
DEC	Agsm	.	⊠⊠	20
DEC	Bram		⁝	2
INC	Cage		⁝	2
DEC	Elci	.		1
INC	Artr		.	1
INC	Crse		⁝	3
INC	Aclo	.	⁝	3
INC	Taof		⁝	2
INC	Ipag	⁝		2
INC	Aspu	.		1
INC	Mela 2		⁚	3 (2)
INC	Erlo		⁝	1
INV	Brte	.	⁝	3
INC	Ardr 2	⁝	.	3 (2)
INC	Assp 3		.	1
INC	Peca		⁚	4
INC	Phfl		.	
	Litter	⊠⊠⊠⊠⊠⁝		
	Rock	⁚		
	Bare Ground	⊠⊠L		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	⁝	⊠⁚			⊠⁚						
Chna		L			L	.					
SYMPH		⁝			⁝						
Chvi		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-53 Vegetation Type Mixed Brush

Location: T 2S R 100W S 11 1/4 1/4 S NE/NE Date 7/24/75

Slope 6° Aspect 355° Elevation 7880'

Field Analyst(s) DAK Pace Interval 4

QA Check KAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 17

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy		L	6
DEC	Kocr	:	1:	7
DEC	Pofe		1:	5
DEC	Agtr	L	⊠::	20
DEC	Feat		:	2
DEC	Troy		⊠	10 (5)
DEC	Hebo	:.		4
INV	STEL		.	1
INC	Cagu		.	1
(3) INC	Arfr	.		1
INC	Hanu	.		1
INC	Bosa	.	:	3
INC	DRABA		.	1
INC	Coum		.	1
INC	Phlo		:.	3
INC	Mela 2	.	:.	5 (2)
INC	Peca		L:	4
INC	Tara		.	1
INC	Erov	::	L	10
INC	Stco 3		.	1
INC	Luca	.	1:	6
INC	Crac	.	::	5 (2)
DEC	Cach 3		:	2

Litter	⊠⊠⊠::
Rock	
Bare Ground	⊠⊠⊠⊠::

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		U			U						
AMALA		⊠:					□			::	
SYMPH	,	.			:						
Chvi	.	..			:.						
Putr		.					.				

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-54 Vegetation Type Sagebrush

Location: T 25 R 100W S 2 1/4 1/4 S NE/SW Date 7/24/75

Slope 1° Aspect 50° Elevation 7540'

Field Analyst(s) DAK Pace Interval 4

QA Check Rpm 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend ↑ U

Soil Stability

Current Erosion SS

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Actr	☐	☒ :	20
DEC	Aaspi		:	3
INC	Poor	1 :	:	7
DEC	Aasm	L	☒	15
DEC	ERca	☒	1 :	16 (10)
INC	Lare	:	☐	11 (5)
INC	Coby		.	1
INV	Sial		-	1
INC	Asdi		.	1
INC	Arfe 4	:	:	6 (5)
INC	Phlo		.	1
INC	Taof		☒	10 (2)
INV	Brtk		:	3
INC	Assp 3		.	1
INC	Phfl		.	1
INC	Atdr 2	.		1
			.	1
INC	Crac		.	1
INC	Urdi		.	1
			☐	

Litter	☒☒☒☒
Rock	
Bare Ground	☐☒..

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Chrna	.	☒			☒ .						
Artr		1 ☐			☐						
PIRES		.					.				
SYMPH		1 :			1 :						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-55 Vegetation Type Bald (Upland Meadow)

Location: T 25 R 100W S 11 1/4 1/4 S SE/NE Date 7/24/75

Slope 10° Aspect 310° Elevation 7900'

Field Analyst(s) DAK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 2

Current Trend ↓ D

Soil Stability

Current Erosion 9

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	•	::	5
DEC	Stcb		::	3
DEC	Kocr		•	1
DEC	Agtr		::	3
DEC	Fear		•	1
INC	Pose	::	•	4
INC	Hanu	::	⊠⊠::	28 (5)
INC	Hyac	•	⊠ U	18 (5)
INC	Phlo		::	4
INC	Peca	1:	⊡	13 (5)
INC	Comm	•	:•	4
-	Arfr 2	•	1:	6
INC	Asom		::	4
DEC	Hebo		:	2
INC	Erlo		•	1
INC	Ipag		•	1
INC	Eral	•	•	2
	Litter	::		
	Rock	⊠.		
	Bare Ground	⊠⊠⊠⊠⊠⊠D		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
		N / A									

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-56 Vegetation Type Mixed Brush

Location: T 25 R 100 W S 15 1/4 1/4 S SE/SE Date 7/24/75

Slope 4/2° Aspect 330° Elevation 8280

Field Analyst(s) DAK Pace Interval 4

QA Check RMM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 9

Current Trend ↑ U

Soil Stability

Current Erosion 27

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	4	4	34 (20)
DEC	Orhy	2	4	11
DEC	Hahoi		1	5
DEC	Stco	1	3	3
INC	Ceae	2	4	20 (15)
DEC	Brtm		2	3
INC	Lile		1	1
INC	Luca	1	2	5
INC	Erov	2	2	6
INC	Erlo		1	6
INC	Acla		1	1
INC	Phmu	1	2	3
DEC	Helm		1	1
DEC	Cach 3		1	1
	Litter	5		
	Rock			
	Bare Ground	2		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Amal		1				1	2			2	
Cemo		2				2					
Quga	1	2			2	1					
Arth		1			1						
SYMPH		1			1						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. OAK-57 Vegetation Type Aspen

Location: T 25 R 100W S 15 1/4 1/4 SSE/SE Date 7/25/75

Slope 31° Aspect 80° Elevation 8100'

Field Analyst(s) OAK Pace Interval 4

QA Check RM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 9

Current Trend ↑ U

Soil Stability

Current Erosion 4/5

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	⊠.	⊠⊠	29 (20)
DEC	Orhy	:	L:	8
INC	STIPA	⁞:	U	12
DEC	Bram	⊠	:.	12 (10)
DEC	Viam	⁞:	:.	8
INC <5	parsley		:	2
INC	THALI	.	:.	4
INC	DELPH		::	4
INC	Achi		:	2
INC	Taof		:.	3 (2)
INC	Senec 2		.	1
INV	STELL		:.	3
INC	Heum		.	1
INC	Cagu		.	1
INC	SMILA		.	1
INC <5	Unknown		.	1
INC	Luca	::	:.	7 (5)
INC	Stco 3		.	1
	Litter	⊠⊠⊠⊠⊠⁞		
	Rock			
	Bare Ground	☐		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Amal		::					:			:	
SYMPH	U				U						
RIBSA sp.	⊠::				⁞::						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-58 Vegetation Type Sagebrush
Location: T 25 R 100W S 15 1/4 1/4 SSE/SW Date 7/25/95
Slope 2° Aspect 205° Elevation 8180'
Field Analyst(s) DAK Pace Interval 4
QA Check RDM 9/16/95

CONDITION AND TREND RATING

Vegetation
Vigor 5
Current Trend ↓ D

Soil Stability
Current Erosion 7
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
	Stco 2		:	1
DEC	Pofe	:	:	3
? DEC	Agspi		:	1
DEC	Orhy	:	:	3
DEC	Agtr	:	:	4
DEC	Stco	:/	.	3
DEC	Fear	::	□	10
DEC	Kocr	::	L	10
DEC	Bran		::	3
INC	Cage	::	:.	7
DEC	Trdu	:		2
INC	Sihy	:	::	4
—	Lark	.		1
INC	Luca	:	⊡	10 (7)
INC	DELPH	.	:	2
INC	Loum		:.	3
DEC	Iscbo		.	1
INC	Dinc	.		1
INC	Phmu	::	.	5
INC	Erov	L		6
INC	Cagu		:	1
INC	Arda		:	2
—	Zyve		:	1
INC	Peca	:	:.	5
INC	Mela 2		:.	2
	Litter	⊠⊠⊡		
	Rock			
	Bare Ground	⊠⊠⊠..		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		□			:.	:	:.				
SYMPH		⊡			⊡	.					
AMALA		L	:				L			:	

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-58

C2 RDM 9/16/75

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agsm			2
INC	Phho			4
INC	Erlo			1
INC	Aspu			1
INC	Ipag			1

BROWSE CONDITION

Species	Age Class				Form Class						
	Young	Mature	Decadent	Dead	1	2	3	4	5	6	Unavailable

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-59 Vegetation Type Douglas Fir

Location: T 35 R WOW S 15 1/4 1/4 S NW/SE Date 7/25/75

Slope 43° Aspect 360° Elevation 8200'

Field Analyst(s) DAK Pace Interval 9

QA Check Tom 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor ↓

Current Trend ↑ W

Soil Stability

Current Erosion 26

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Popr		▨	9
DEC	Orhy	⁘	⁘	3
DEC	Agtr	⁘	▩	16
? DEC	Agspi		⁘	5
DEC	Stco	⁘	⁘	6
DEC	Kocr	⁘	⁘	3
INC	Cage	▨	⁘	16 (15)
DEC	Agsm		⁘	1
DEC	Bram		⁘	1
INC	STEL	⁘	⁘	2
INC	Luca	▨	⁘	9 (7)
DEC	TRIFO	⁘	⁘	8 (5)
INC	Toof		⁘	2
INC	Acla	⁘	⁘	2
INC	Erov	⁘	⁘	8
INC	Mela 2		⁘	1
DEC	Carh 3	⁘		3 (2)
INC	DELPH		⁘	2
INC	Erlo		⁘	1
INC	Coum		⁘	1
INC	Plpa		⁘	1
	Litter	▨▨▨▨		
	Rock			
	Bare Ground	▨⁘⁘		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Amal		⁘							⁘	⁘	
Abla		⁘			⁘						
Quga		⁘						⁘			
SYMPH	⁘				⁘						
Cemo		▨							⁘	⁘	
Pual		⁘						⁘	⁘		

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-60 Vegetation Type Sagebrush

Location: T 25 R 100W S 15 1/4 1/4 S SW/NE Date 7/25/75

Slope 10 Aspect 330° Elevation 7920

Field Analyst(s) DAK Pace Interval 4

QA Check Robert D. MacGregor ✓ 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend ↑ U

Soil Stability

Current Erosion 22

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
? Dec	Aasp i	L	⊠□	24
DEC	Agtr	⁝	⁝	8
INC	Popr	⁝	□	12
DEC	Stco		U	7
DEC	Orhy	.		1
DEC	Brca	⁝	⁝	4
DEC	Acsm	⁝	⊠⁝	15
DEC	Stci	⁝	⁝	7
INC	Hoju		-	1
INC	Tri	.		1
(B) INC	Artr		⁚	3
INV	Cidr		-	1
INV	Brte		⁝	5
INC	Crse	.	-	2
INC	Phlo	-	⁝	3
INC	Acla	⁝	⁝	5 (2)
INC	Agci		-	1
	Litter	⊠⊠⊠⊠⁝		
	Rock			
	Bare Ground	⊠⊠.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠			⊠						
SYMPH		⁚			⁚						
Opmo		U			U						
RIBES		.				.					
Chvi		⁝			⁚						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-61 Vegetation Type Mixed Brush

Location: T 15 R 99W S 29 1/4 1/4 S SE/NW Date 7/26/75

Slope 30° Aspect 160° Elevation 7480'

Field Analyst(s) DAK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↓ D

Soil Stability

Current Erosion 20

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco	::	⊠::	18 (15)
DEC	Orhy	:	⊠	12
DEC	Agtr	L	⊠:	18
DEC	Kocr		.	1
DEC	Agsm		1:	5
INC	Crac		.	1
INC	Fofe		L:	6 (5)
INC	Lucu		::	3
INV	Brte		::	3
INC	Crse		::	3
DEC	Hebo		:	2
INC	Phlo		:	2
INC	Phpi		.	1
INC	Basa		::	3
INC	Hanu	1:	1:	10 (5)
INC	Asou		::	3
INC	Erad		.	1
INC	Phmu	:		2
INC	Phho	:	:	4
INC	Copa 2		.	1
INC	Semu 2		.	1
	Litter	⊠::		
	Rock	⊠ .		
	Bare Ground	⊠⊠⊠⊠⊠::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Chvi	.	:			:.						
AMAL	:	:.				.	1:				
CYMPH	.	L:			⊔						
Pied	.				.						.
Pust		.					.				
Artr		L:	:		◻						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-62 Vegetation Type Sagebrush
Location: T 15 R 100W S 36 1/4 1/4 S NE/NW Date 7/26/75
Slope 0° Aspect 0° Elevation 7800'
Field Analyst(s) DAK Pace Interval 4
QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend ↓ D

Soil Stability

Current Erosion 19
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco		⊠.	11
DEC	Kocr		::	3
DEC	Feat	.	.	2
DEC	Pofe		.	1
DEC	Trqy	::	1:	8 (5)
DEC	Agsm	.	⊠	11
INC	Cage		:	2
INC	Sihy		:	2
INC	Pose		.	1
INC	Phlo		4	7 (5)
INC	Crse		:	2
INC	Peca	⊠	⊠⊡	29 (5)
INC	Alte 2		:	1
INC	Hanu	.	:	3
INC	Spco 2		1:	5
DEC	Hebo	.	.	2
INC	Hyac		.	1
INC	Gusa		::	4
INC	Luca	.	.	2
DEC	Cach3		.	1
INC	Aspu		.	1
INC	Eral		.	1

Litter	⊠□	
Rock	:	
Bare Ground	⊠⊠⊠⊠⊠⊠ :	

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	::	⊠□	.		⊠⊠:						
Chvi	:				:						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-63 Vegetation Type Mixed Brush

Location: T 1S R 100W S 36 1/4 1/4 S SW/NE Date 7/26/75

Slope 7° Aspect 140° Elevation 7700'

Field Analyst(s) DAK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 2

Current Trend ↓ D

Soil Stability

Current Erosion 9

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	:	::	6
DEC	Agtr		:	2
DEC	Agsm		::	4
INC	Sihy		:	2
INC	Lile	.	⊠⊠	21 (5)
INV	Ciar		□	8
INC	Hanu	U	⊠⊠	26 (5)
INC	Mare		::	4
INC	Phfl		::	3
INC	Peca	.	.	2
INC	Erum	L	⊠	16 (5)
DEC	Cach3		::	3 (2)
INC	Crse		.	1
INC	Gusa		:	2

Litter	U
Rock	L
Bare Ground	⊠⊠⊠⊠⊠⊠⊠

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
AMALA		□	::				::			⊠	
Chna		:			.	.					
Puti		:					:				
Cemo	:	U				:	:			1:	

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-64 Vegetation Type Sagebrush

Location: T 1S R 100W S 36 1/4 1/4 S NE/SW Date 7/26/73

Slope 1° Aspect 40° Elevation 7520'

Field Analyst(s) DAK Pace Interval 2

QA Check Pam 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 30

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
1 INC	Popr	:	⊠	12
DEC	Orhy		.	1
DEC	Agsm	⊔	⊠ ⊠	27 (20)
DEC	Elci	::	⊠ ⊠	23 (10)
INC	Sihy		:	2
INV	Brte		⊠	10
→INC 210 —	Artr ⊠	:	⊠ :	10
INV	CRUCIFERAE		.	1
INV	CIRSI		.	1
INC	Gusa		:	2
INC	LARE		:	1
INC	Coum	.	:	3
INC	Spco 2		:	2
	Litter	⊠⊠⊠⊠⊠⊠::		
	Rock			
	Bare Ground	⊠⊠ .		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Chna		⊠::			⊠::						
Artr		⊠			⊠	.					
Chvi	.				.						
Atca		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-65 Vegetation Type Mixed Brush

Location: T 1S R 100W S 36 1/4 1/4 SSW/NE Date 7/26/75

Slope 17° Aspect 330° Elevation 7600'

Field Analyst(s) DAK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend → S

Soil Stability

Current Erosion 24

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco	:		2
DEC	Agtr	:	⊠ :	13
DEC	Orhy	:	⊓ :	7
DEC	Fecar	.	⊔	8
DEC	Pafe		⊔ :	4
DEC	Agspi		⊔	3
INC	Cage	::	⊔	11
DEC	Trgl	:	⊠	11 (5)
INC	Pose		⊔	3
INC	Mela 2		⊔ :	4 (2)
DEC	Hebo	::	.	4
INC	Peca	::	.	5
INC	Luca		⊠	10 (7)
INC	Basa	.	:	3
INC	UNK.		.	1
INC	Eror	.		1
INC	Erlo		.	1
INC	ERIGE	.	.	2
INC	Stco3		.	1
INC	Coum	.		1
INC	Ipag		-	1
DEC	Cach3		.	1
INC	Crac	.	:	3 (2)
	Litter	⊠⊠⊠⊠⊠⊠		
	Rock			
	Bare Ground	⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Amal		⊠ ⊔					⊠ ⊔				
SYMPH		.			.						
Artr	.	⊔			⊔						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DAK-66 Vegetation Type Aspen

Location: T 15 R 100W S 34 1/4 1/4 S SE/SW Date 7/27/75

Slope 5° Aspect 90° Elevation 8000'

Field Analyst(s) DAK Pace Interval 2

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 9

Current Trend ↑ ↓

Soil Stability

Current Erosion 45

Current Trend ↑ ↓

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco		:	2
? DEC	Aspi		:	3
DEC	Stco	L	□	14
DEC	Agtr	:	:	6
DEC	AGROP	⊠ :	4	18
DEC	Bran	:	:	6
INC	Cage	1 :	:	7
INC	DELPH	1 :	:	8 (5)
— INC	GAIL	:	:	2
INC	THAL	.		1
DEC	TRIFO	.		1
INV	Ciar	.		1
INC	VIOLA	:		3 (2)
INC	Acla	:		3 (2)
INC	SOLID	:	:	6 (5)
INV	STELL	:	:	5
R INC	ROSA spp.		:	2
— INC	UNK umbell			1
INC	SMILA	.		1
INC	WHETH	.		1
INV	Trdu	.		1
INC	UNK	.		1
INC	Luca	:	.	3
INC	Mela 2	.	:	3 (2)
	Litter	⊠⊠⊠⊠ :		
	Rock			
	Bare Ground			

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
AMAL		⊠⊠ 1 :			:	:		⊠ :	L :		
						.					

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAK-67 Vegetation Type Mixed Brush

Location: T 2S R 100W S 3 1/4 1/4 S SE/NE Date 7/27/75

Slope 13° Aspect 160° Elevation 8000'

Field Analyst(s) DAK Pace Interval 2

QA Check PDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 15

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	5	5	5
DEC	Kocr	1	1	1
? DEC	Agspi	3	3	3
DEC	Orhy	3	3	3
INC	Cagl	5	10	10
DEC	Agsm	5	5	5
DEC	Hebo	7	7	7
INC	Phfl	3	3	3
INC	Luca	8	13	13 (7)
INC	Acla	4	4	4 (2)
INC	Lile	1	1	1
INC	Asdi	3	3	3
INC	Peca	10	10	10 (5)
INC	Crse	1	1	1
INC	Ipag	4	4	4
INC	Erum	1	1	1
INC	Mela 2	2	2	2
DEC	Cach 3	2	2	2
INC	Coum	7	7	7 (5)
INV	STELL	2	2	2
INC	Basa	1	1	1
INC	Arde 2	3	3	3 (2)
P INC	Artr	4	4	4
INV	Bite	2	2	2
INC	Eral	1	1	1
	Litter			
	Rock			
	Bare Ground			

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Amal		5					3			1	
Quga		2			1	1					
Putr		2					2				
Artr	1	1	1		1						
SYMPH		2			2						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DAL-68 Vegetation Type Bald (Upland Meadow)

Location: T 2S R 100W S 2 1/4 1/4 S NE/NW Date 7/27/77

Slope 6° Aspect 160° Elevation 8005'

Field Analyst(s) DAK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 2

Current Trend ↓ D

Soil Stability

Current Erosion 11

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy		:	1
DEC	Steo		::	2
DEC	Agtr	.	⁞	6
DEC	Kocr		⁞	5
DEC	Agsm	:	⊠	13
INC	Aspu	⁞	⁞	7 (5)
INC	Peca	⊠	□	17 (5)
INC	Phlo		:	2
INC	Hyac		⊠	10 (5)
INC	Gusa	:	:	3
DEC	Hebo	:	:	5
INC	Hanu		⊠	14 (5)
INC	Crse		:	2
INC	Aste 3		:	3
INC	Fral		.	1
INC	Phfl		.	1
INC	Coum		.	1
INC	UNK		.	1
INC	Erlo		.	1
INC	Phmu		.	1
(B) INC	Arfr		.	1
INC	Spec 2		.	1
	Litter	::		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠⊔		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
		N/A									

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-3 Vegetation Type Pinyon Juniper
Location: T 2S R 99W S 3 1/4 1/4 S SW/SW Date 7/12/75
Slope 4° Aspect 282° Elevation 6900'
Field Analyst(s) DCK Pace Interval 2
QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 3
Current Trend ↓ (D)

Soil Stability

Current Erosion 8
Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Asdi		.	1
INC	Coum		⊠	10 (5)
INC	Erum	.	..	3
DEC	Orhy	:.	⊠.	14
DEC	Agti		⊠.	11
DEC	Agspi		:.	3
INC	Brte		:.	3
DEC	Trgy		L:	6 (5)
INC	Sihy		.	1
INC	Pose		⊓	8 (5)
INC	Cage	.	⊔	8
INC	Aspu		:.	3
INC	Chdo		..	2
INC	Hooc	:	:	4
INC	Phfl		.	1
INC	Semu2		..	2
INC	Hanu		.	1
INC	Phmu		.	1
INC	Phho		.	1
INC	Crse		⊠	10 (5)
INC	Spcp 2		L:	6 (5)
INC	Chfr 2		.	1

Litter	⊠⊠⊠:
Rock	⊠
Bare Ground	⊠⊠⊠⊠⊠:

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
OPUNT		.			.						
Pied	:	:.			:.	.					:
Artr		l:	.		..	:.					
Juos	.	:.	:.		:	.					:.
SYMPH		.			.						
Amut		:.	.				:.				

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK #4 Vegetation Type Pinyon Juniper
Location: T 2S R 99W S 9 1/4 1/4 S SW/SW Date 7/12/75
Slope 3° Aspect 83° Elevation 7360
Field Analyst(s) DCK Pace Interval 4
QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend ↓ (D)

Soil Stability

Current Erosion 12
Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Aspu	:	⊠ L	18 (5)
DEC	Orhy	:	⊠ :	14
DEC	Kocr		.	1
INC	Cage		⊠	9
INC	Pose	.	::	5 (5)
DEC	Trgy		L	6 (5)
DEC	Agsm		:.	3
INC	Sihy		:.	3
INC	Crse		L	7 (5)
INC	Arfe 4		L	6 (5)
INC	Spco 2		I:	5 (5)
INC	Ipag	.	.	1
INC	Phpf		L:	6 (5)
INC	Chfr 2		::	4 (2)
INC	Phho		.	1
INC	Chdo		::	4
INC	Dene		.	1
INC	Coum		..	2
INC.	Copo 2		..	2
INC	Basa		.	1
INC	Anse		.	1
	Litter	⊠ ⊠ ⊠ ⊠		
	Rock	L		
	Bare Ground	⊠ ⊠ ⊠ ⊠ □		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pied	:.	⊠			:.						⊠
Artr			:.			:					
Juos	..	:	::		:.						L
OPUNT		..			..						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK #5 Vegetation Type Pinyon Juniper
Location: T 25 R 99W S 8 1/4 1/4 S SE/SE Date 7/12/75
Slope 17° Aspect 280° Elevation 7220
Field Analyst(s) DCK Pace Interval 4
QA Check RBM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend → (S)

Soil Stability

Current Erosion 7
Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orby		⊠ 𝍸	16
DEC	Agtr	:	⊠ ::	16
DEC	Fear		::	4
INC	Coae	1:	1:	10
INC	SiRy	1:	𝍸	9
INC	Pose	.	1:	5 (5)
INC	Popr		.	1
INC	Semv 2		..	2
INC	Peca		.	1
INC	Asdi		.	1
INC	Crse		𝍸	7 (5)
INC	Erum		𝍸:	6 (5)
INC	Spco 2		:	2
INC	Hanu		:	2
INC	Phfl		𝍸:	6 (5)
INC	Aspu		.	1
INC	Phho		::	4
INC	Crfr 2		1:	5 (2)
?? INV	Evfe		::	3
	Litter	⊠ ⊠ ⊠		
	Rock	::		
	Bare Ground	⊠ ⊠ ⊠ ⊠ ⊠ 𝍸		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		1:	.		::	:					
Amut		::				::					
Juos	.	.	::	.	::						::
Pied	.	::	..	.	::			.			::
Chvi		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK #6 Vegetation Type Pinyon Juniper
Location: T 15 R 99W S 35 1/4 1/4 S SE|SE Date 7/14/75
Slope 3° Aspect 350° Elevation 6810'
Field Analyst(s) DCK Pace Interval 4
QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 3
Current Trend ↓ (D)

Soil Stability

Current Erosion 13
Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Ipco		•	1
INC	Hyac		•	1
DEC	Agspi		•	1
DEC	Kocr		:.	3
DEC	Fear		:.	3
DEC	Agtr	•	⊠	11
DEC	Orhy		□	8
DEC	Stco		•	1
INC	Sihy		•	1
INC	Hojv		•	1
INC	Pose	•	⊠⊠	21 (5)
INC	Cage	•	:	3
DEC	Trgy	•	..	3
INC	Phfl		::	2
INC	Chfr 2		•	1
INC	Crse	•	L:	7 (5)
INC	Phho	•	□	9 (5)
INC	Semu 2	•	:	3
INC	Asdi		:.	3
INC	Aspu		..	2
INC	Erea		:.	3 (2)
INC	Chdo		:	2
INC	Crac		..	2 (2)
INC	Phlo		::	2
INC	Hanu		::	4
	Litter	⊠ ⊠ ⊠ !:		
	Rock	⊠ ::		
	Bare Ground	⊠⊠ ⊠⊠::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		.		.	.						:
Pied	.	!:	.		:.	.					::
Juos	:	:	::	.	.	.					□
Arut		..			.		.				
Pitr		!.			::	.					

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK 7 Vegetation Type Sagebrush
Location: T 15 R 99 W S 35 1/4 1/4 S SE/NW Date 9/14/75
Slope 1° Aspect 65° Elevation 6520'
Field Analyst(s) DCK Pace Interval 4
QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6
Current Trend ↑ (u)

Soil Stability

Current Erosion 5
Current Trend ↑ (u)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Elci	..	𝍸	8
DEC	Agsp1		𝍸	7
INC	Brin	.	𝍸	8
DEC	Koer		.	1
DEC	Orhy	.		1
INC	Poar	.	𝍸 𝍸 𝍸	28
DEC	Agsm	.	𝍸 𝍸 𝍸	28 (20)
INC	Spco2		⁘	3
INC	Taof		⁘	3 (2)
INC	Chdo		.	1
INC	Tpag	.	..	3
INC	DESTU		.	1 <T
INC	Coum		.	1
INC	PENST		𝍸	6
DEC	Cach.3		.	1

Litter	⊠ ⊠ ⊠ ⊠ ◪
Rock	
Bare Ground	⊠ ⊠ ⊠ ⊠ ⁘

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	.	⊠ □			⊠ ⊠						
Chna		𝍸			𝍸						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK # 8 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 26 1/4 1/4 S SE/SW Date 7/14/79

Slope 7° Aspect 170° Elevation 6800'

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 3

Current Trend ↓ (D)

Soil Stability

Current Erosion 12

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Chfr 2		:.	3
INC	Asdi		:	2
DEC	Agtr		L:	6
DEC	Orhy		::	4
DEC	Kocr		.	1
DEC	Feat		.	1
INC	Cage	:.	:.	6
INC	Pose		.	1
DEC	Agsm		.	1
INC	Chdo		.	1
INC	Hanu		☒..	12 (1
INC	Tpcd		☒☒	19 (5)
INC	Crse		L.	6 (5)
INC	Phho	.	☒.	12 (5)
INC	Arfe 3		:.	3
INC	Phfl		L	7 (5)
INC	Ipag		.	1
INC	Semu 2	.	::	5 (5)
INC	Aspu	.	:.	4
INC	PENS		.	1
INC	Toin	.	:.	4 (2)
~~INC~~	Arfe #		.	1
	Litter	☒☒L		
	Rock	☒L		
	Bare Ground	☒☒☒☒☒		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos	.	::	□		.	.					☒.
Artr		:.			:.	.					
Died	..		:.		:.						:.
Putr		.			.						
Amut		:.					:.				

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK #9 Vegetation Type Pinyon Juniper
Location: T 1S R 99W S 25 1/4 1/4 S SE/NE Date 7/14/75
Slope 4° Aspect 109° Elevation 6530'
Field Analyst(s) DCK Pace Interval ✓
QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend → (S)

Soil Stability

Current Erosion 10
Current Trend ✓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	.	⊠:.	14
DEC	Orhy	.	..	3
DEC	Kocr		.	1
DEC	Fear		.	1
DEC	Agsm	.	⊠1:	16
INC	Sihy	.	..	3
INC	Cage	.	.	2
INC	Pose		..	2
?? INV	Euro		..	2
INC	Erum	:.	:	5 (5)
INC	Hanu	.	⊠:.	14 (5)
INC	Phho		⊠:.	13 (5)
INC	Aspu		1:	5 (5)
INC	Chfr2		:.	3 (2)
INC	Phfl		L:	6 (5)
INC	Crse		1:	5 (5)
INC	Toin		.	2 (2)
INC	Semu2		.	1
INC	Erde		:.	2

Litter	⊠ ⊠ :
Rock	⊠ :
Bare Ground	⊠ ⊠ ⊠ ⊠ ⊠ ⊔

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos		..	⊠:								⊠::
Crv.		.			.						
Pied	..				..						
Amut		:.			:.						
Artr		:.			:.						
Puhr		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK #10 Vegetation Type Pinyon Juniper
Location: T 15 R 99W S 36 1/4 1/4 S NW/NE Date 7/14/75
Slope 2° Aspect 309° Elevation 6620'
Field Analyst(s) DCK Pace Interval 4
QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation
Vigor 4/
Current Trend → (S)

Soil Stability
Current Erosion 10
Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Peco		•	1
INC	Asdi	•		1
INC	LOMA		•	1
DEC	Agtr	•	⊠:	13
DEC	Orhy		⊠	10
DEC	Stco		:.	3
DEC	Agspi		:	2
INC	Pose		:.	3
INC	Sihy		..	2
INC	Hanu		..	2
INC	Semu2		:.	3
INC	Crse	•	⊔	8 (5)
?? INV	Eufe	•	⊠:	13
INC	Haac		•	1
DEC	Hebo		•	1
INC	Area		⊔	7 (2)
INC	Phho	•	⊠	11 (5)
INC	Aspu		!:	5 (5)
INC	Tpro	•	□	9 (5)
INC	Phfl		..	2
INC	Toin	•	.	2 (2).
	Litter	⊠⊠:.		
	Rock	:.		
	Bare Ground	⊠⊠⊠⊠⊠⊠⊔		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos	:.	⊔:	:.	.	:.	.					□
Pico	!:	:.			⊔						:
Artr		:.		.	:.						.

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK 11 Vegetation Type Sagebrush
Location: T 15 R 98W S 19 1/4 1/4 S SW/SE Date 7/15/75
Slope 8° Aspect 116° Elevation 6620'
Field Analyst(s) DCK Pace Interval 4
QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend → (S)

Soil Stability

Current Erosion 15
Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	:	⊠.	13
DEC	Agtr		..	2
INV	Brte		1:	5
DEC	Sten		:.	3
DEC	Fear		:.	3
DEC	Agsm		⊠ L	16
INC	POA sp.		.	1
INC	Sihy	.	.	2
INC	Erla	:	:.	6
INC	HAMU	:	1:	7 (5)
INC	Ipco		□	8 (5)
INV	Euta		1:	5
INC	Spco 2		□	8 (5)
INC	Luca	.	.	2
INV	CHEN		..	2
INC	Aspu		:	1
INC	Phfl		:	2
INC	Chdo		.	1
INC	Phho	.	⊠	10 (5)
INC	Erea		.	1
INC	OENO		..	2
	Litter	::		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠⊠⊠ L		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Chno		.			.						
Arti	.	⊠□			⊠:.	L					
Chvi		::			::						
Save		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-12 Vegetation Type Sagebrush

Location: T 15 R 98W S 29 1/4 1/4 S SW|SW Date 7/15/75

Slope 13° Aspect 15° Elevation 6420'

Field Analyst(s) DCK Pace Interval 4

QA Check RMM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ (D)

Soil Stability

Current Erosion 18

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Luca		..	2
INC	Deri		.	1
INC	Chdo		::	4
INC	ARABF		..	2
INC	Soco 2		.	1
?? INC	Lare		..	2 (5)
INC	Semu 2		.	1
DEC	Orhy		:.	3
INV	Brte		..	2
DEC	Kocr		.	1
DEC	Agtr		.	1
DEC	Fear		.	1
DEC	Agsm		□	7
INC	Popr		.	1
INC	Ipco		□	7 (5)
INC	Aspu		:.	3
INC	Phfl		⊠ :.	13 (5)
INC	Erlo	..	⊠ :.	15
INC	OENO		..	2
INC	Hanu		:.	3
INC	Arca		.	1
?? ~~INC~~ INV	Eufe	.	..	3
INC	Phho	:	⊠ !:	17 (5)
DEC	Hebo		.	1
INC	Crse		.	1
	Litter	□		
	Rock	!:		
	Bare Ground	⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⊠ :		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠ L	.		⊠ L	.					
Chvi		::			::	.					
Tydo	.	.			.						.
Save		.			.						
Atco		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-12

RBM 9/16/75

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Asdi		.	1
INC	Toin		::	4 (2)

BROWSE CONDITION

Species	Age Class				Form Class						
	Young	Mature	Decadent	Dead	1	2	3	4	5	6	Unavailable

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-13 Vegetation Type Pinyon Juniper
Location: T 15 R 98W S 31 1/4 1/4 S SW/NE Date 7/15/75
Slope 8° Aspect 240° Elevation 6500'
Field Analyst(s) DCK Pace Interval 4
QA Check Ram 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend ↓ (D)

Soil Stability

Current Erosion II
Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy		:.	3
DEC	Agtr	.	1:	6
DEC	Stco		.	1
DEC	Fear		.	1
INC	Pose		.	1
INC	Cage	.	.	2
INC	Area		1:	5 (2)
INC	Tain		L	6 (2)
INC	Erlo		⊠:.	14
INC	Hanu		⊔	7 (5)
INC	Phho		□	8 (5)
INV	Eufe		⊠ L	16
INC	Eral		:.	3
INC	Chdo		..	2
INC	Phfl	.	::	5 (5)
INC	Semv2		:.	3
INC	Aspu		⊔	7 (5)
INC	Ipso	.	⊔	8 (5)
INC	Chfr 2		.	1
INC	Asdi		.	1

Litter	⊠ :
Rock	:.
Bare Ground	⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⊠ .

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
JUOS	L	L	:.		⊔	.					⊔
Arar		:.		.	:	.					.
Mer	1:	:			::			.			:

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-141 Vegetation Type Pinyon Juniper
Location: T 1S R 98W S 31 1/4 1/4 S SW/SW Date 7/15/75
Slope 40° Aspect 94° Elevation 6690'
Field Analyst(s) DCK Pace Interval 4
QA Check 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend ↑ (U)

Soil Stability

Current Erosion 2-1
Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Crse		.	1
INC	Erlo		:	2
INC	Haoc		.	1
INC	Chdo		.	1
DEC	Artr	..	⊠ :	1-1
DEC	Orhy		⊠	10
INC	Cagl		.	1
INC	Poce		.	1
INC	Asdi		:.	3
INC	Semu2		..	2
INC	Area		:.	3 (2)
INC	Phhn		⊔	7 (5)
INC	Toin		..	2 (2)
INC	Phfl		⁞	5 (5)
INC	Trci	.	⊠⊠ ::	25 (5)
INC	Assp.3		:.	3
INC	Eral		.	1
INC	Haru		..	2
INC	Aspu		::	4
INV	Eufe		⊠	9
INC	Hyfi		:.	3 (2)
	Litter	⊠ ::		
	Rock	⊠		
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠ ::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Putr		..			..						
Amut		.				.	.				
Artr		.				.					
Orhy	..	⊠			..						⊠
Juos		::	::								⊔
Chvi		:			..						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-15 Vegetation Type Pinyon Juniper

Location: T 1S R 99W S 34 1/4 1/4 S SW|SW Date 7|16|75

Slope 10° Aspect 300° Elevation 6800'

Field Analyst(s) DCK Pace Interval 4

QA Check KBM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ (U)

Soil Stability

Current Erosion 8

Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Stco		::	4
DEC	Orhy	.	⊔	7
INC	Sihy		⊠	9
DEC	Agtr		::	4
DEC	Pofe		⊠⊠⊠::	34 (20)
INC	Coco		1:	5
DEC	Trgy		:.	3
INC	Pose	.	⊔	8 (5)
DEC	Acm		..	2
INC	Sému 2		.	1
INC	Crce		⊠	9 (3
INC	Chfr 2		⊔	6 (2)
INC	Chdo		..	2
INC	Acdi		..	2
INC	Phfl		..	2
INC	Arca		.	1
INC	Acgu		.	1
	Litter	⊠⊠⊠⊠⊠1:		
	Rock	1:		
	Bare Ground	⊠⊠⊠□		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pied	..	⊔	.		:.						⊔
Jucs	.	::	1:		..						□
Artr		..	:.			1:					

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-16 Vegetation Type Sagebrush

Location: T 2S R 99W S 5 1/4 1/4 S NE / SE Date 7/17/75

Slope 17° Aspect 320° Elevation 7030

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend → (S)

Soil Stability

Current Erosion 11

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Cach 3		•	1
INC	Sihy		:	2
DEC	Orhy		⊠	9
DEC	Stco		..	2
DEC	Agspi		..	2
DEC	Agtr		..	2
DEC	Trgy		:.	3
INC	Prcr		⊠ 1:	15 (5)
DEC	Agsm		⊠ L:	16
DEC	Pote		•	1
INC	Cane	•		1
INC	Ph #1		•	1
INC	Crec	..	1:	7 (5)
INC	Spco 2	.	⊠	10 (5)
INC	Phho	::	⊠:.	17 (5)
INC	Assu		..	2
INC	Coum		•	1
INC	Mare		•	1
INC	Lare		•	1 (5)
INC	ERIGE		•	1
INC	Pera		:	2
INC	Asdi		•	1
INC	Hanu		•	1
INC	Arco		•	1
	Litter	⊠⊠⊠1:		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠ L		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Teca	•				•						
Artr		⊠::	::	:	⊠1:	:.					:
Arvi		.				.					
SYMOH	:.				:.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-17 Vegetation Type Sagebrush

Location: T 1S R 99W S 33 1/4 1/4 S SW/NE Date 7/17/75

Slope 6° Aspect 20° Elevation 6820'

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend → (S)

Soil Stability

Current Erosion 15

Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	.	1:	16
DEC	Agspi			7
DEC	Orhy	.		19
DEC	Agsm			9
INC	Sihy	:	:	6
INC	Posc		.	1
?? INC	CRUTC		:	12 (2)
INC	Crse		::	14 (5)
INC	Hyac		.	1
INC	Chfr2		:	6 (3)
?? INC	Lare			8 (3)
INC	Taof		.	1
	Litter		:	
	Rock		.	
	Bare Ground		:	

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	.		.								
Adca		:			:	.					
Sy ia		:			:						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK -18 Vegetation Type Sagebrush

Location: T 15 R 98W S 19 1/4 1/4 S SE/NW Date 7/17/75

Slope ^30^ Aspect 115° Elevation 6530'

Field Analyst(s) DCK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend → (S)

Soil Stability

Current Erosion 15

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	.	⊠⊠.	22 (20)
DEC	Agtr		.	1
DEC	Stco		:.	3
DEC	Agsm	.	⊠□	19
INC	Pase	.	:.	4
INC	Sihy		..	2
INC	Aspu		..	2
INC	Phho	:.	⊠.	15 (5)
INC	Hanu		:.	3
INC	Crse		..	2
INC	Phli		.	1
INC	Soco 2	.	⊠⊠	20 (5)
INC	Ipso		.	1
?? INV	Eufe		.	1
INC	Phlo		.	1
INC	Asdi		.	1
INC	Coum		..	2
	Litter	□		
	Rock	.		
	Bare Ground	⊠⊠⊠□⊠⊠⊠:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠U	L		⊠.	⊠:					
Chvi		.			.						
Eula		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-19 Vegetation Type Pinyon-Juniper

Location: T 1S R 99W S 14 1/4 1/4 S SE/SE Date 7/17/75

Slope 3° Aspect 45° Elevation 6620'

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ (D)

Soil Stability

Current Erosion 16

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	.	U	8
DEC	Orhy	.	⊠ :.	14
DEC	Stco		.	1
DEC	Kocr		⁝	5
DEC	Aospi		.	1
INC	Sihy		U	7
INC	Pore		.	1
DEC	Agsm		.	1
INC	Hanu	.	⊠	11
INC	Phho	.	:.	4
INC	Aspu		.	1
?? INV	Eufe		⊠⊠ ⁝	22
INC	Crse		::	4
INC	Area		.	1
INC	Ipco		:.	3
INC	Coum		⊠	9 (5)
INC	Semu2		:.	3
INC	Erum		.	1
INC	Toin		.	1
INC	Asdi		..	2
	Litter	⊠⊠ U		
	Rock	..		
	Bare Ground	⊠⊠⊠⊠⊠⊠ U		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos	.	U	:.		⊠						..
Artr		U	.	.	⁝	⁝					.
Chvi		..			..						
Kied		..			.						.
Putr		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-20A Vegetation Type Sagebrush

Location: T 2S R 99W S 5 1/4 1/4 S SW NE Date 7/17/75

Slope ~7° Aspect 320° Elevation 7010'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ (U)

Soil Stability

Current Erosion 34

Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agspi		•	1
DEC	Agtr		⊠	9
DEC	Koer		::	2
DEC	Orhy		∴	6
DEC	Elci		•	2
INC	Pose		•	1
DEC	Pofe		⊠ ::	14
INC	Sihy		::	2
INC	Trdu		⊠⊠⊠	30 (2)
?? INC	CRUIC		∴	6 (2)
INC	Peco		•	1
INC	SPCO2		□	8 (5)
INC	Acla		⁘	3
?? INC	Lase		⁘	4 (5)
INC	Chfr 2		⁘	4
INC	Meci		•	1
INC	Anse		⁖	3
INC	Deri		•	1
?? INC	Phco		•	1
?? INC	RANUN		•	1
	Litter	⊠⊠⊠⊠⊠⊠⊠		
	Rock	⁘		
	Bare Ground	⊠⊠□		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Chno		□			□						
Artr		⊠ ∴			⊠ ∴						
RIBES		•			-						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-20B Vegetation Type Sagebrush

Location: T 15 R 98W S 20 1/4 1/4 S SE/SW Date 7/18/75

Slope 20° Aspect 50° Elevation 6480'

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ (D)

Soil Stability

Current Erosion 25

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	:	⊠⊠⊠.	33 (20)
DEC	Agtr		..	2
DEC	Fear		.	1
DEC	Koer		..	2
DEC	Pofe		.	1
INC	Siby		L	6
INC	Pose		⊠:	11 (5)
DEC	Acsm	.	⊠:.	14
INC	PHho	:	⊠	12 (5)
INC	Sdco2		⊠::	14 (5)
INC	Ipco		:	2
INC	Asdi		.	1
INC	Crse		.	1
	Litter	⊠⊠		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠L		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Arar		⊠1:	1:	.	:.	⊠	H				.
Chvi		.			.						
Juos	..				..						
Save		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-21 Vegetation Type PINYON JUNIPER

Location: T 15 R 98W S 20 1/4 1/4 S SW SE Date 7/18/75

Slope 7° Aspect 150° Elevation 6470

Field Analyst(s) DCK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ (D)

Soil Stability

Current Erosion 19

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr		:.	3
DEC	Orhy		.	1
INC	Cage		:	2
INC	Sihy		:	2
?? INV	Eufe	.	⊠⊠⊠:.	34
INC	Erlo	:	⊠.	13
INC	Aspu		.	1
INC	Phho		:	2
INC	Crse		⊠:.	13 (5)
INC	Phfl		⊠..	12 (5)
INC	Chclo		::	4
INC	Erov		.	1
INC	Ipco	.	::	5 (5)
INC	OEND		.	1
INC	Stco 3		.	1
INC	Ascl		.	1
?? INC	CRUIC		..	2
INC	Semu 2		..	2

Litter	⊠⊠::	
Rock	L	
Bare Ground	⊠⊠⊠⊠⊠⊠ L	

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Putr		.			.						
Artr	.	L			:.	::					
Juns	..	⊠.	:.		:.						⊠:.
Pied		.									.

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-22 Vegetation Type Pinyon Juniper

Location: T 15 R 98W S 18 1/4 1/4 S SW/NE Date 7/18/75

Slope 3° Aspect 290° Elevation 6560'

Field Analyst(s) DCK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend →

Soil Stability

Current Erosion 13

Current Trend ↓

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	..	⊠⊠	22 (20)
DEC	Agtr	.	⊔	8
DEC	Agsp1		.	1
DEC	Koer	:.	⊠	13
DEC	Stco		..	2
INC	Cane		:.	3
INC	Sihy		:.	3
DEC	Pafe		:	1
INC	Semu 2		:.	3
?? INV	Eufe		⊠::	14
INC	Heac		.	1
INC	Phho		:.	3
INC	Crse		⊠	10 (5)
INC	Phfl		..	2
INC	Arca		.	1
INC	Chfr 2		::	4 (2)
INC	Toin		..	2 (2)
INC	Idag		.	1
INC	Erlo		.	1
INC	Erum		.	1
INC	Idco		.	1
INC	Aspu		.	1
INC	Pbse		..	2
	Litter	⊠⊠⊠⊠		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠ ::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos	.	::	⊔	.	:						⊠.
Artr	.	□	.		⊠	.			-		
Putr		:			..						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-23 Vegetation Type Sagebrush

Location: T 15 R 98W S 18 1/4 1/4 S NE/NE Date 7/18/75

Slope 2° Aspect 130° Elevation 6500'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation		Soil Stability	
Vigor	4	Current Erosion	18
Current Trend	↓ (D)	Current Trend	↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr		L:	6
DEC	Feair	..	⊠⊠⊠⊠:.	45 (15)
DEC	Agsm		1:	5
DEC	Orhy		::	4
INC	Pose	..	L	9 (5)
INC	Sihy		L:	6
INC	Phho	.	L:	7 (5)
INC	Sqo2		⊠:	12 (5)
INC	Hanu		::	4
INC	Senu2		.	1
INC	Phfl		.	1
	Litter	⊠ L		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠:	:.		⊠:	:.					
Save		:.			:.						
Atco		::			::						
Eula		:.			:.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-24 Vegetation Type Pinyon Juniper

Location: T 15 R 98W S 8 1/4 1/4 S NW/SE Date 7/18/75

Slope 17° Aspect 200° Elevation 6450'

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend -> (S)

Soil Stability

Current Erosion 18

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	..	𝍸 𝍸 ⊔	29 (20)
DEC	Orhy		..	2
DEC	Stco	.		1
INC	Cage		:.	3
INC	Siky		.	1
INC	Pose		.	1
INC	Area		.	2 (2)
INC	Hagu		𝍸 𝍸	19 (5)
27 INV	Eufe	.	𝍸 :	13
INC	Ipco		□	8 (5)
INC	Semu 2		::	4
INC	Phho		::	4
INC	Assp 3		:.	3
INC	Crse		1:	5 (5)
INC	Hoac		.	1
INC	Spco 2		.	1
INC	Phfl		.	1
INC	Aspu		.	1
INC	Chdo		.	1

Litter	𝍸 𝍸 𝍸
Rock	::
Bare Ground	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 :

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pico	:.	⊔			::						1.
Artr		:.			:	.					
Pifr	.	..	.		:.	.					
Chvi		.			.						
Juos		1:			:						:.
Save		..			..						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-25 Vegetation Type Pinyon Juniper

Location: T 25 R 99W S 1 1/4 1/4 S NE SW Date 7/20/75

Slope 3° Aspect 270° Elevation 6860'

Field Analyst(s) DCK Pace Interval 4

QA Check RAm 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ (U)

Soil Stability

Current Erosion 14

Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy		⊠:	12
DEC	Agtr		⊠⊠⊠	29 (20)
DEC	Kocr		..	2
INC	Pose	:	⊠ U	19 (5)
INC	Cage		1:	5
DEC	Pote		:.	3
INC	Sihy		.	1
INC	Phhb		□	8 (5)
INC	Hanu		1:	5 (5)
INC	Crse		U	7 (5)
INC	Chfr 2		:	2 (2)
INC	Asdi		.	1
INC	Aspu		:	2
INC	Phfl		:	2
INC	Semu 2		.	1
INC	Haac		.	1
	Litter	⊠⊠⊠⊠L		
	Rock	::		
	Bare Ground	⊠⊠⊠⊠□		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	.	1:	:		1;	:.					
Putr		..			:	.					
Juos		..	U								⊠
Fied	..	:.		.	.			:			:.

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-26 Vegetation Type Sagebrush

Location: T 15 R 99W S 26 1/4 1/4 S NE/NE Date 7/20/95

Slope 6° Aspect 85° Elevation 6760'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/95

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend → (S)

Soil Stability

Current Erosion 10

Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr	.	⊠::	15
DEC	Orhy	.	⊓	8
DEC	Stco	..	⊠⊠	21 (15)
DEC	Koer	.	..	3
INC	Sihy		⊠.	11
INC	Pose	.	⊏	8 (5)
DEC	Pofe		.	1
INC	Phho	.	⊠:	13 (5)
INC	Spco2	::	⊏	11 (5)
INC	Semu2		..	2
INC	Haac		.	1
INC	CRUIC		.	1
INC	Asdi		:.	3
INC	Tain		.	1
INC	Hanu		.	1

Litter	⊠:
Rock	⊏
Bare Ground	⊠⊠⊠⊠⊠⊠.

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠⊠	:.	.	⊠1:	U					.
Pied	.				.						
Juos	.				.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-27 Vegetation Type Sagebrush
Location: T 15 R 99W S 14 1/4 1/4 S SW/NW Date 7/21/75
Slope 3° Aspect 285° Elevation 6660'
Field Analyst(s) DCK Pace Interval 4
QA Check pdm 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6
Current Trend ↑ (u)

Soil Stability

Current Erosion 14
Current Trend → (s)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agspi		.	1
DEC	Agtr	:.	⊠ □	21 (20)
DEC	Orhy		□	8
DEC	Kocr		:.	3
DEC	Stco	:	⊠ .	13
DEC	Fear		.	1
DEC	Agsm		⊡:	5
INC	Sihy	.	⊡:	6
INC	Pose		..	2
INC	CRUIC	.	.	2
INC	Chfr 2		L:	6 (2)
DEC	Hebo		:	2
INC	Phlo	:.	⊔	11 (5)
INC	Arca		.	1
INC	Idco		:	2
INC	Arli		L:	6 (5)
INC	Acpu		..	2
INC	Erov		.	1
INC	Spco 2		..	2
INC	Seinu 2		: .	3
INC	ERIGE		.	1
INC	Chdo		.	1
	Litter	⊠⊠⊠:.		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠L		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠⊠.	:	.	⊠⊠	:.					.
Sicd	.				.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-28 Vegetation Type Pinyon Juniper
Location: T 15 R 99W S 15 1/4 1/4 SSW/NE Date 7/21/76
Slope 9° Aspect 320° Elevation 6760'
Field Analyst(s) DCK Pace Interval 4
QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend → (S)

Soil Stability

Current Erosion 15
Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Aspu		.	1
DEC	Agtr	.	1:	6
DEC	Kocr	.	::	4
DEC	Orhy		L:	6
DEC	Feat		..	2
DEC	Stco		.	1
INC	Pose	.	1:	6 (5)
INC	Sihy		.	1
DEC	Agcm		..	2
INC	Lepu	.		1
INC	Hanu	.	⊠	10 (5)
INC	Ipco	.	⊠	9 (5)
?? INV	Eufe		:.	3
INC	Phfl	.		1
?? INC	Erpu 2	..	.	3
INC	Phho	..	⊠..	14 (5)
INC	Arca	.	⊠.	12 (2)
INC	Asdi		L:	6 (5)
DEC	Hebo		W	7
INC	Erer		..	1
INC	Spco 2		.	1
INC	Chdo		.	1
INC	Crse		..	2
	Litter	⊠ □		
	Rock			
	Bare Ground	⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos	:.	⊠ 1:			:.			L:			⊠
Artr		::			:	:					
Save		.			.						
Crco		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-29 Vegetation Type Sagebrush

Location: T 15 R 99W S 23 1/4 1/4 SSE/NW Date 7/21/75

Slope 3° Aspect 45° Elevation 6760'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ (u)

Soil Stability

Current Erosion 27

Current Trend ↑ (u)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agsm	::	⊠⊠⊠⊠:	1/6 (20)
DEC	Sfco	.	⊠	7
DEC	Orhy		:.	3
INV	Chal		⊠⊠⊠ 1:	35
?? INC	Lare		⊠.	6 (5)
?? INC	CRUIC		:.	2 (2)
INC	CLEO		.	1
	Litter	⊠⊠⊠⊠⊠:		
	Rock			
	Bare Ground	⊠⊠⊠⊠:.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	.	⊠⊠	.	.	:⊠⊠						.
Euh		:			:						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-30 Vegetation Type Sagebrush
Location: T 15 R 99W S 21 1/4 1/4 S SE/NE Date 7/21/75
Slope 7° Aspect 290° Elevation 6960'
Field Analyst(s) DCK Pace Interval 4
QA Check KDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend ↑ (U)

Soil Stability

Current Erosion 13
Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Kocr		⚬	1
DEC	Orhy	⚬	⚬	7
INC	Sihy		⚬	1
DEC	Stco		⊠ ⁚	14
DEC	Agsm		⊠ ▨	19
DEC	Fear		⁚	2
INC	Pose	⁚	⊠ ⚬	13 (5)
DEC	Agtr		▨	9
DEC	Trdy		⁚	2
INC	Asdi		⁚	4
INC	Phho	⁚	⁚	7
INC	Semy 2		□	8 (5)
INC	Taof			1
INC	Chdo		⁚	3
INC	Crac		⁚	3 (2)
INC	Erpu 2		⁚	2
INC	Aspu		⚬	1
INC	Crse		⚬	1
DEC	Hebo		⚬	1
INC	Meci		⚬	1
	Litter	⊠ ⊠ ⊔		
	Rock			
	Bare Ground	⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⌐		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	⁚	⊠ ⌐	⁚		⊠ ⊠	⁚					
Juos	⁚				⁚						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-31 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 21 1/4 1/4 S NW/NE Date 9/21/75

Slope 13° Aspect 275° Elevation 6980'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ (U)

Soil Stability

Current Erosion 21

Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agspi		.	1
DEC	Agtr	.	⊠⊠:	23 (20)
DEC	Stco	.	⊠	11
DEC	Orhy		1:	5
DEC	Kocr		⊔	7
DEC	Fear		::	4
INC	Pose	.	□	9 (5)
INC	Cage	:.	:	5
INC	Haoc	:.	:	5 (5)
INC	Erum	.	:	3
INC	Phho	.	□	9 (5)
INC	Semu2		..	2
INC	Crac		.	1
INC	Spco2		.	1
INC	Crse	.	⊔	8 (5)
INC	Chdo		.	1
INC	Basa	.		1
INC	Luca		.	1
INC	Chfr2		.	1
INC	Meci		.	1
INC	Hanu		.	1

Litter	⊠⊠⊠☑	
Rock	⊠.	
Bare Ground	⊠⊠⊠⊔	

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos		1:	:.					.			⊔
Artr		☑	..		⊠	.		.			
Putr		.			.						
Pied		:.		.							:.
Amut		.						.			

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-32 Vegetation Type Pinyon Juniper

Location: T 15 R 99W S 21 1/4 1/4 S SW1SW Date 7/21/75

Slope 7° Aspect 85° Elevation 7200

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ (U)

Soil Stability

Current Erosion 19

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Meci	.		1
DEC	Kocr		.	1
DEC	Agtr	.	⊠⊠	21 20
DEC	Agspi		..	2
DEC	Orhy		:.	3
DEC	Stco		:.	3
DEC	Fear	.	⊠.	12
INC	Pose	.	⊔	8 (5)
DEC	Trgy		⊠:	12 (5)
INC	Sihy		:.	3
INC	Coge		.	1
INC	Hanu		::	4
INC	Chdo		..	2
INC	Erpu 2		..	2
INC	Phho		..	2
INC	Asdi		.	1
INC	Luco		:.	3
INC	Crse		::	4
INC	Erum		.	1
?? INC	Copa 2		.	1
INC	Ipag		..	2
INC	Crac		:.	3 (2)
INC	Soco 2		..	2
INC	Bosp	.	::	5 (5)
INC	Chfr 2		.	1
	Litter	⊠⊠⊠⊠⊔		
	Rock	::		
	Bare Ground	⊠⊠⊠⊠:.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pied	:.	:!			:.			:			:.
Juos	..	L:	.		..						⊓
Rufr		!:			!:						
Artr		:.			:.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK 33 Vegetation Type Sagebrush

Location: T 15 R 99W S 13 1/4 1/4 S SE/SE Date 7/22/75

Slope 4° Aspect 150° Elevation 6560'

Field Analyst(s) DCK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ (U)

Soil Stability

Current Erosion 18

Current Trend → (S)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agsm	:	⊠⊠⊠Γ.	38 (20)
DEC	Stco		:.	3
DEC	Orhy		L:	6
DEC	Agtr		::	2
INC	Spco 2	.	⊠:	13 (5)
INC	Lare		.	1 (5)
INC	Phho	:	⊠	12 (5)
INC	Ipco	.	.	2
INC	Erov		.	1
INC	Erlo		L.	6
INC	Hanu		l:	5 (5)
INV	Eufe		.	1
INC	Lyau		..	2
INC	Pose		..	2
INC	Sihy	:	:	4
	Litter	⊠⊠		
	Rock	.		
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Arar	..	⊠		:	⊠	.					:
ARTRT		.			.						
Eula		:			:						
Chvi		.			.						
Chna		□			□						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-34 Vegetation Type Pinyon Juniper
Location: T 1S R 99W S 24 1/4 1/4 S NE/SW Date 7/22/75
Slope 3° Aspect 90° Elevation 6640'
Field Analyst(s) DCK Pace Interval 4
QA Check ROM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend ↓ D

Soil Stability

Current Erosion 15
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Fear		.	1
Dec	Agtr	:	⊠⊠:	24 (20)
Dec	AGRO		:.	3
Inc	Stco		:.	3 (5)
Dec	Orhy	.	□	9
Dec	Koer		.	1
Inc	Sihy		⁞	5
Inc	Pose		:	2
Dec	Acgm		:	2
INV	Erfe	.	⁞	6
Inc	Crse		⊠⁞	15 (5)
Inc	Phho	.	..	3
Inc	Aspo		.	1
Inc	Arca		:.	3 (2)
Inc	Hanu	.	⊠.	12 (5)
Inc	Leno		:.	3
Inc	Phfl		..	2
Inc	Chfr2		.	1
Inc	Erpo 2		.	1
Inc	Asdi		.	1
Inc	Hyfi		..	2
	Litter	⊠⊠⊠⊠⁞		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
JUOS		:.	⊔								⊠.
Arar		⊔	..	.	⊔	:					.
Fico		..									..
Chvi		..			:						.

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-35 Vegetation Type Sagebrush
Location: T 1S R 99W S 26 1/4 1/4 S NW/NW Date 7/22/75
Slope 3° Aspect 10° Elevation 6820'
Field Analyst(s) DCK Pace Interval 4
QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend → S

Soil Stability

Current Erosion 16
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	Stco	:	⊠:.	15 (5)
Dec	Fear		:.	3
Dec	Agtr		□	8
Dec	Orhy		⊠	10
Dec	Kocr		:.	3
Dec	Agsm		□	8
Inc	Pose	..	..	4
Inc	Sihy		::	4
Inc	Aspu		:.	3
Inc	Erpu 2		::	4
Inc	Toin	.	.	2
Inc	Phho	:.	□	10
Inc	Asdi	.	..	3
Inc	Ipco		..	2
Inc	Chdo		:.	3
Inc	Semu 2		::	4
Dec	Hebo		.	1
Inc	Phfl		..	2
Inc	Hapu		⊠	10 (5)
INV	Eufe		.	1
	Litter	⊠⊠.		
	Rock	.		
	Bare Ground	⊠⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠L'	::		⊠:.	L'	.				
Chvi		::			::	.	.				
Juos		.									

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-36 Vegetation Type Pinion Juniper

Location: T 15 R 99W S 26 1/4-1/4 S NE/NW Date 7/22/75

Slope 17° Aspect 160° Elevation 6780'

Field Analyst(s) DCK Pace Interval 1

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend → S

Soil Stability

Current Erosion 16

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Agtr		⊠⊠ ⊔	27 (20)
Dec	Kocr		⁚	3
Dec	Fear		⁚	3
Dec	Orhy		⊠.	11
Inc	Stco	.		1
Inc	Sihy		⊔	7
Inc	Pose		..	2
Inc	ARIST		.	1
Inc	Crco		⁚	3
INV	Eufo	.	⊠⊠	21
Inc	Aspu		⁞	5
Inc	Hopu		□	8 (5)
Inc	Erpu 2		.	1
Inc	Phfl	.	.	2
Inc	Phho		.	1
Inc	Semu2		.	1
Inc	CRUIC		.	1
Inc	Ipco		.	1
Inc	Erum		.	1

Litter	⊠⊠⊠⊠⊔
Rock	⁞
Bare Ground	⊠⊠⊠⊠⁞

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pied	.	⊔	.	.	.			⁚			⁞
Juos		..	.					.			..
Mutr		⁚			⁚						
Ertr	.	⁞	..		⁞	⁚	.				
											/

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-37 Vegetation Type Pinyon Juniper

Location: T 1S R 99W S 27 1/4 1/4 S NE NE Date 7/22/75

Slope 2° Aspect 5° Elevation 6840'

Field Analyst(s) DCK Pace Interval 4

QA Check RM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ U

Soil Stability

Current Erosion 23

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Agtr	:	⊠ □	20
Inc	Stco	.	1:	6 (5)
Dec	Orhy	.	⊠	10
Dec	Frar	.	⊠	10
Dec	Kocr		::	4
Inc	Pose	.	L:	7 (5)
Inc	Sihy		.	1
Inc	Hanu		L:	6 (5)
Inc	Phho.	.	L	8 (5)
Inc	Phfl		1:	5
Inc	Asdu		:.	3
Inc	Semu2		:.	3
Inc	Crse		:.	4
Inc	Tdco		1:	5
Inc	Assp 3	:	:.	5
Inc	Area		.	1
Inc	Hacr	.		1
Inc	Ipag		.	1
	Litter	⊠⊠⊠⊠:		
	Rock	1:		
	Bare Ground	⊠⊠⊠⊠!		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Juos	..	:.	⊠		:.			.			⊠.
Pied	.	..	.	..	.	.		..			:.
Pifr	.	:	.		:.	.					

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-38 Vegetation Type Sagebrush

Location: T 15 R 99W S 22 1/4 1/4 S SW|SE Date 7/22/75

Slope 4° Aspect 75° Elevation 6940'

Field Analyst(s) DCK Pace Interval 4

QA Check ROM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 3

Current Trend → S

Soil Stability

Current Erosion 13

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Agtr		⊠□	18
Inc	Stco	:	⊠⊔	19 (5)
Dec	Korr		:.	3
Dec	Orhy		⊠	9
Dec	Feat	.	L·	9
Inc	Pase	1:	⊠	15 (5)
Dec	Trgy		.	1
Dec	Agsm		.	1
Inc	Sihy		..	2
Dec	Hebb	.	⊠	11 (10)
Inc	Phho	.	L·	7 (6)
Inc	Erpu 2		.	1
Inc	Phfl		.	1
Inc	Chfr		.	1
Inc	Crce		:.	3
Inc	Area		.	1
	Litter	⊠⊠⊠.		
	Rock	.		
	Bare Ground	⊠⊠⊠⊠⊠□		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	..	⊠:	L·		⊠	⊠·					
Juos	.	:		.	.			.	.		.
Yhy.		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK 39 Vegetation Type Mixed Brush

Location: T 1S R 99W S 20 1/4 1/4 S NW|SW Date 7/23/75

Slope 7° Aspect 310° Elevation 7180'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ U

Soil Stability

Current Erosion 7

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total	
Dec	Agtr	.	⊠	11	
Dec	Orhy	.	⊠⊠.	22	(20)
Dec	Kocr	.	L.	7	
Inc	STIPA		:.	3	
Dec	Agspi		.	1	
Inc	Pase		:.	3	
Dec	Pofe		.	1	
Dec	Agsm		.	1	
Inc	Peca	.	⊠	11	(5)
Inc	Coum	::	L	11	(5)
Inc	Luca.		:	2	
Inc	Erum.		::	4	
Inc	Crac.		:.	3	(2)
Inc	Crse	.	::	5	
Inc	Bosa.		.	1	
Inc	Phlo.		.	1	
Inc	UENOT		.	1	
Inc	Semu2		.	1	
Inc	Aspu		.	1	
Inc	Spco2	.	L	7	(5)
Inc	Chdo	.	.	2	
Inc	Hoac		:	1	
	Litter	⊠⊠⊠:.			
	Rock				
	Bare Ground	⊠⊠⊠⊠⊠L			

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Amut		L:	.	.	.	L:					.
Kowa		.	.		.						
Arta	..	1:	.		1:	:	.				
SYMPH		:.			:.						
Tem		::			::						
Chvi		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-410 Vegetation Type Mixed Brush

Location: T 15 R 99W S 31 1/4 1/4 S NW|NW Date 7/23/75

Slope 30° Aspect 210° Elevation 7660'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ U

Soil Stability

Current Erosion 17

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	Mare		..	2
Inc	Phfl		.	1
Inc	Hanu	..	⊔	8 (5)
Inc	Lepu	.	:.	4
Inc	Basa		..	2
Inc	Crse		.	1
Dec	Agspi		.	1
Dec	Agtr	:.	⊔	10
Dec	Fear		:.	5
Dec	Koer	.	.	2
Dec	Stco		:.	5
Dec	Orhy		.	1
Dec	Aosm	.	⊔	8
Dec	Trgy		..	2
Inc	Luca	:.	⊡	11 (7)
Inc	Coum	:	⊠	12 (5)
Inc	Peca	:	⊔	8 (5)
Inc	Meci		.	1
Inc	Erum	.	.	2
Inc	Phlo		.	7 (5)
Inc	Ipag		.	1
Inc	Seco2		:.	3
Inc	Hyac		:.	3
Inc	Lile		:	1
Inc	Semu2		:	2
	Litter	⊠⊠⊠⊠.		
	Rock	:.		
	Bare Ground	⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	.	⊠			:.	⊔					
CHRY		:.			.	:.					
Pota		::			.	::					
Arnu	.	:.	.		.	:.					

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-410

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COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	Asch			1
Dec	Hebo			2

BROWSE CONDITION

Species	Age Class				Form Class						
	Young	Mature	Decadent	Dead	1	2	3	4	5	6	Unavailable

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK 41 Vegetation Type Sagebrush
Location: T 15 R 100W S 36 1/4 1/4 S SE/NW Date 7/23/75
Slope 3° Aspect 260° Elevation 7830
Field Analyst(s) DCK Pace Interval 4
QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend ↑ U

Soil Stability

Current Erosion U
Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Kocr	.	□	9
Inc	Stco	.	⊔	8 (5)
Dec	Fear	:.	:.	7
Dec	Trgy	.	⊠□	19 (5)
Inc	Pose	:.	⊠.	14 (5)
Dec	Agsm		⊔	7
Inc	Semn2	.	1:	6 (5)
Inc	Spco2	.	.	2
Inc	Coum		1:	5
Inc	Peca	.	::	5
Inc	Phlo		..	2
Inc	Alle		..	2
Inc	Chdo		1:	5
Inc	Lyju		.	1
Dec	Hebo		.	1
Inc	Luco	.	.	2
Inc	Basa	.	:.	4
Inc	CALDC		.	1
	Litter	⊠⊠⊠◪		
	Rock	⊠:		
	Bare Ground	⊠⊠⊠!:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Arir	:.	⊠□	.			⊠	⊠:				
Chde		.				.					
Tera		.				.					
Amut	.					.					

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-42 Vegetation Type Mixed Brush

Location: T 15 R 100W S 35 1/4 1/4 S NW/SW Date 7/23/75

Slope 30° Aspect 320° Elevation 8050'

Field Analyst(s) DCK Pace Interval 1

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend ↑ u

Soil Stability

Current Erosion 5

Current Trend ↑ u

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	Stco	L	L	12 (5)
Dcc	Kocr		.	1
Dcc	Fesc		.	1
Dcc	Tray	.	⊠	11 (5)
Inc	Cage	□	⊔	15
Dcc	Agsm	.	L	7
Inc	Sihy	.	..	3
Inc	Peca	.	⁞	6 (5)
Inc	Coum		⁞	4
Inc	Aspu		.	1
Inc	Basa		⁞	3
Inc	Erum	⊔	⊠	16 (5)
Inc	Luca	⁞	⊠	11 (7)
Inc	Crac		⁞	3 (2)
Inc	ASTRA	.	.	2
Inc	CREPI		..	2
Inc	CALOC		.	1
Inc	Five		.	1
	Litter	⊠⊠⊠⊠⊠⊔		
	Rock			
	Bare Ground	⊠ ⁞		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠ ⊔			⁞	⊠⁞					
Amut		⊔			⁞	⁞					
SYMPH		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-43 Vegetation Type Bald
Location: T 1S R 100W S 35 1/4 1/4 S SE/NE Date 7/23/75
Slope 7° Aspect 180° Elevation 7860'
Field Analyst(s) DCK Pace Interval 4
QA Check RDm 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend → 5

Soil Stability

Current Erosion 10
Current Trend → 5

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Agtr	::	⊠	13
Dec	Kocr	..	1:	7
Dec	Stco	.	1:	6
Dec	Orhy		.	1
Dec	Feid		.	1
Dec	Agsm	:	:.	5
Dec	Tray		:.	2
Inc	Cacie	.	:.	3
Inc	Hobu	.	⊠⊠	21 (5)
Inc	Peca	1:	⊠	15 (5)
Inc	Erig	:	⊠	11
Inc	Phfl		.	1
Inc	Luca	:	.	3
Inc	Semu2		.	1
Inc	OXYTR		L:	6 (5)
Inc	Hooc		:	2
Inc	Zive		.	1
Inc	Ipro		.	1
	Litter	⊠.		
	Rock	::		
	Bare Ground	⊠⊠⊠⊠⊠⊠ 1:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
		NA									

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-4/4 Vegetation Type Sagebrush

Location: T 25 R 100W S 12 1/4 1/4 S SE/SE Date 9/24/75

Slope 6° Aspect 170° Elevation 7630'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑ U

Soil Stability

Current Erosion 7

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	Eral		·	1
Dec	Fear	·	··	4
Dec	Orhy	·	·	4
Inc	Pose	··	··	6 (5)
Dec	Troy		⊠⊠	19 (5)
Dec	Aosm		□	8
Inc	Cage		·	2
Inc	Sibu		·	1
Inc	Chdo		··	4
Inc	Coum		⊠··	14 (5)
Dec	Hebo		·	1
Inc	Ipag		·	1
Inc	Erum		··	5
Inc	Semu2		··	2
Inc	Spco2		··	3
Inc	Peca	··	⊠	12 (5)
Inc	Pefr		·	2
Inc	Copa		·	1
Inc	Phlo		·	1
Inc	Luca		··	4
Inc	Phfl		·	2
Inc	Hyac		·	1
Inc	Stco		·	2
	Litter	⊠⊠⊠		
	Rock			
	Bare Ground	⊠⊠⊠⊠ ⊠⊠.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	·	⊠□	·	·	··	⊠□					·
SYMPH	·	·			·						
Amut		·			·						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-115 Vegetation Type Pinyon Juniper

Location: T 25 R 100W S 13 1/4 1/4 S SW/NE Date 7/24/75

Slope 40° Aspect 180° Elevation 7540'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↓ D

Soil Stability

Current Erosion 40

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Agtr	.	⊠:	13
Dec	Orhy		⊠:.	13
Inc	Cage		.	1
Inc	Erlo	::	⊠⊠⊠⊠ L:	60 (20)
Inc	Cium		..	2
Inc	Crse		:.	3
Inc	Spco 2		..	2
Inc	Ph fl		:.	3
Inc	Hanu		.	1
Inc	Chfr 2		.	1
Inc	Stco 3		.	1
	Litter	⊠ L		
	Rock	.		
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠ L		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Cemn		L.			:.	.					
Pipa	..	L	.	:.	..	:		L			:.
Amut		:.			.	:					
Juos		.	.			.					.
Quga	.				.						
SIMPL	.				.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK 4/6 Vegetation Type Mixed Brush

Location: T 25 R 100W S 13 1/4 1/4 S NW/SE Date 7/24/75

Slope 18° Aspect 340° Elevation 7450'

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ U

Soil Stability

Current Erosion 10

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Dcc	HERAC		.	1
Dcc	Cach 3		.	1
Inc	Anse.		..	2
Inc	VIOLA		:.	3 (2)
Inc	SMILA		.	1
Dcc	Actr		.	1
Dcc	Fear		..	2
Dcc	Sted		..	2
Dcc	Agsp1	.	:.	4
Dcc	Pofe		.	1
Inc	Cage		.	1
Inc	POA spp.	⊠ 1:	□	23
Inc	Acla	:	1:	7 (2)
Inc	Erum		.	1
Inc	ANTEN	.	1:	6 (5)
Inc	Lyco	::	⊠	11 (2)
Inc	Toc	:.	⊠	14 (2)
Inc	GENTI		.	1
Inc	Geri		□	7
Inc	ERIGE		.	1
Inc	Copa		:	2
Dcc	Viam	.	1:	6
Inc	Phmu		.	1
Inv	CHENO		.	1
	Litter	⊠⊠⊠⊠⊠⊠		
	Rock			
	Bare Ground	⊠ 1:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
SIMP//		⊠			⊠						
Artr		□			:.	:.					
Amut		:.						:.			
Quna		:						.			
RIBES		:.			.	:					
RDSA spp		:			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-117 Vegetation Type Mixed Brush

Location: T 25 R 100W S 14 1/4 1/4 S NE | NE Date 7/24/75

Slope 5° Aspect 800 Elevation 7900'

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ U

Soil Stability

Current Erosion 6

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	STIPA		1:	5
Dec	Fear	:	:	4
Dec	Agspi		1:	5
Dec	Agsm		:.	4
Inc	Cage	:	:.	5
Inc	POA spp.	:	:.	5
Dec	Trgy		□	8 (5)
Inc	Erum	L:	□	14 (5)
Inc	Phmv	⊠	⊠ ⊔	27 (5)
Inc	Taof		:.	3 (2)
Inc	Coum		:	2
Inc	Luca	:	:.	5
Inc	Crac		1:	5 (2)
Inc	ARABU	.		1
Inc	FRAGA		:	2
Inc	Copa 2	.	.	2
Inc	Hyac		.	1
Inc	ANTEN	.		1
Inc	Phlo		.	1
	Litter	⊠ ⊠ ⊠ ⊠ ⊠ ⊔		
	Rock			
	Bare Ground	⊠ ⊔		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Amel		:.	:		.	..		:			
Arti		⊠	.		□	:.					
SYMPH	:	L:	.		□	.					

RDOSP PROCESS REVIEW

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-48 Vegetation Type Mixed Brush

Location: T 2S R 100W S 15 1/4 1/4 S NE/NE Date 7/24/75

Slope 24° Aspect 190° Elevation 8260'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/19/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ U

Soil Stability

Current Erosion 12

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	Phmy	::	.	5
Inc	Toef		..	2
Inc	CREDI		.	1
Inc	STIPA	:.	⊔	10
Dec	Agspi		::	4
Dec	Brte		.	1
Dec	Orhy		:.	3
Inc	Mebl		.	1
Dec	Agsm		⊠	10
Dec	Tray		::	4
Inc	Cade	.	.	2
Inc	POA spp.		.	1
Inc	Phlo		:.	3
Inc	Luca	:	⊠.	13 (7)
Inc	CRUIC.		.	1
Inc	Asdi.		.	1
Inc	Peca	.	1:	6 (5)
Inc	Ipag		.	1
Inc	Chdo	.	.	2
Inc	Coum	.	1:	6 (5)
Inc	Erum	L.	1:	11 (5)
Inc	ASTRA	.	.	2
Inc	Crac	::	:.	7 (2)
Inc	Busa	.	.	2
Inc	Copa 2		.	1
	Litter	⊠⊠⊠⊠W		
	Rock			
	Bare Ground	⊠⊠□		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Erth	:.	⊠::			⊠.	L					
Sylo		.			.						
Q.ga	.				.						
SYMP		:.			:.	.					
Amut		:.			..		.	.			

RBOSP

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-49 Vegetation Type Bald

Location: T 2S R 100W S 14 1/4 1/4 S SE/NW Date 7/24/75

Slope 7° Aspect 210° Elevation 8080'

Field Analyst(s) DCK Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↑ U

Soil Stability

Current Erosion 14

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Kocr	.	⊠.	12
Dec	Artr	.	⊞	8
Dec	Fear	.	:	3
Inc	STIPA		.	1
Inc	Pose	.	1:	6 (5)
Dec	Agsm		.	1
Inc	OXYTR	.	:.	4
Inc	Crse	.	⊞	8 (5)
Inc	Peca	1:	⊞.	11 (5)
Inc	Hyoc	:	⊠⊞.	18 (5)
Inc	Hanu	:	⊠	11 (5)
Dec	Hebo	.		1
Inc	Phfl	.	:	3
Inc	Assp 3	.	.	2
Inc	Somu 2		.	1
Inc	Phlo		.	1
Inc	Erlo	..	.	3
Inc	Coum		1:	5
Inc	Aspu		.	1
	Litter	1:		
	Rock	:		
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠:		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
NA											

USDSP [illegible] STATION

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-50 Vegetation Type Sagebrush
Location: T 2S R 100W S 14 1/4 1/4 S NW/NW Date 7/25/75
Slope 6° Aspect 95° Elevation 8140'
Field Analyst(s) DCK Pace Interval 4
QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6
Current Trend ↑ U

Soil Stability

Current Erosion 15
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	STIPA		.	1
Dec	Agsm	:.	⊠	12
Dec	Trgy	:.	⊠⊠	23 (5)
Inc	POA spp.	:.	L	10
Inc	Cage		:.	2
Inc	Crac		:.	3 (2)
Inc	Phlo		:.	5
Inc	Peca	:	⊠ :.	17 (5)
Inc	Coum		:.	3
Inc	Phmu	:.	:.	10 (5)
Inc	Hyac		:.	3
Inc	CREPI		:.	3 (2)
Inc	ANTEN		.	1
Inc	Sasa2		:.	3
Dec	Hebo		.	1
Inc	Luca		.	1
Inc	Basa	.	.	2
	Litter	⊠⊠⊠⊠.		
	Rock	.		
	Bare Ground	⊠⊠⊠⊠.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	:.	⊠ □	.		U	⊠:.					
Amut	.	.			.	.					
Eula	.				.						
Putr		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-51 Vegetation Type Mixed Brush
Location: T 25 R 100 W S 10 1/4 1/4 S SE/SE Date 7/25/75
Slope 17° Aspect 345° Elevation 8200'
Field Analyst(s) DCK Pace Interval 4
QA Check KDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6
Current Trend ↑ U

Soil Stability

Current Erosion 11
Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	Hoju		•	1
Inc	STIPA	•	:.	4
Dec	Agsp		:.	3
Dec	Fear	•	:	3
Dec	Trgy	•	⊠::	15 (5)
Inc	Cade		:.	3
Inc	POA spp.	•	⊡:	6
Dec	Agsm		:	2
Inc	PHmu	⊠L	⊠:.	29 (5)
Inc	Crac		L:	6 (2)
Inc	ANTEN	:	::	6 (1)
Inc	Coum		L:	6 (5)
Inc	Luca	:	⊡:	7
Inc	FRAGA		:.	3 (2)
Inc	PENST		:	2
Inc	Peca		:	2
Inc	Erum		•	1
Inc	Basa		•	1
	Litter	⊠⊠⊠⊠⊠□		
	Rock			
	Bare Ground	⊠□		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠	:	•	□	::					•
Pied	•				•						
Amut	•	⊡:	•		:.	•		:.			
SYMPH		•			•						
Quga	•				•						
Putr		•			•						
Chde		•			•						

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-52 Vegetation Type Aspen

Location: T 25 R 100W S 10 1/4 1/4 S SW/SW Date 7/25/75

Slope 17° Aspect 140° Elevation 8340'

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 8

Current Trend ↑ U

Soil Stability

Current Erosion 3

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
INC UNK#3			.	1 (5)
Dec	Viam	.	:.	4
Dec	Agspi	.	1:	6
Dec	BROMU		⊠:.	13 (10)
Inc	STIPA	.	1:	6
Dec	Bran		.	1
Inc	Cage	.	:.	5
Inc	Acta	.	⊠	11 (2)
Inc	Thmo		1:	5
Inc	SMILA	:	1:	7 (2)
Inc	CREPI		1:	5 (2)
Inc	Vaox	..	:.	5
Dec	Agcq	.	1:	6 (5)
Inc	Taof		.	1
Inc	VIOLA	.	:	3 (2)
Inc	Heun	.	U	8 (5)
Dec	HERAC	.	:.	5
Inv.	CHENO		L	6
Inc	FRAGA		..	2
	Litter	⊠⊠⊠⊠⊠⊠⊠:.		
	Rock			
	Bare Ground	⊠ :.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
ROWO		:.			:.						
SYMP		⊠:			⊠:	.					
Potr	:	:.			:.						:
RIBE		.			.						.
PRUN	:.				:.						
Artr		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-53 Vegetation Type Douglas Fir
Location: T 25 R 100W S 14 1/4 1/4 S NW/NW Date 7/25/75
Slope 35° Aspect 320° Elevation 8220'
Field Analyst(s) DCK Pace Interval 4
QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend -> S

Soil Stability

Current Erosion 27
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Bram	:.	⊠⊠.	21 (10)
Dec	BROMU	:	⊠	11 (10)
Inc	POA spp.	⊠	⊠::	20
Dec	Viam	::	⊠::	18 (10)
Inc	VIOLA		□	8 (2)
Dec	Agca		::	4
Dec	Cach 3		:	2
Inc	Gabo		:.	4
Inc	Vaoc		:	2
Inc	GENTI	.	:	3
Inc	Anse		.	1
INCS	UNK #5	.	:	3
	Litter		⊠⊠⊠⊠⊠:	
	Rock			
	Bare Ground		⊠⊠.	

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
AMAL		:.						:.			
Pema		:.									:.
SYMO		⊠:			⊠:						
PRUNU		.			.						
ROWO		:.			:.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCk-54 Vegetation Type Bald
Location: T 25 R 100W S 11 1/4 1/4 S SE/SW Date 7/25/75
Slope 1° Aspect 355° Elevation 8100'
Field Analyst(s) Kestrel Pace Interval 4
QA Check RDm 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend ↑ U

Soil Stability

Current Erosion 9
Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Fear		1:	5
Dec	Kocr	:	⊠4	18 (15)
Inc	Stco	:		2
Dec	Agtr		:	2
Dec	Agsm	.	⊠⊠.	22 (20)
Dec	Tragy		::	4
Inc	Pose	:	:	3
Inc	Crse		:	2
Inc	Peca	1:	⊠:	17 (5)
Inc	Hanu	.	:	3
Inc	Hyac	4	□	15 (5)
Inc	Erlo		!	2
Inc	Semu2	.		1
Dec	Hebo	:		1
Inc	Aslu	.	.	2
Inc	Phlo		.	1

Litter	⊠
Rock	
Bare Ground	⊠⊠□▫⊠⊠□

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
NA											

File No. C.1.1.1

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-55 Vegetation Type Sagebrush

Location: T 15 R 99W S 20 1/4 1/4 S SW|SW Date 7/26/75

Slope 5° Aspect 295° Elevation 7100'

Field Analyst(s) DCK Pace Interval 4

QA Check ROM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ U

Soil Stability

Current Erosion 19

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Agspi		⊠ ∴	13
Inc	Stco	∴	1∴	7 (5)
Inc	Brin	∴	⊔	11
Dec	Agtr		.	1
Dec	Agsm	1∴	⊠⊠	24 (20)
Inc	Pose	∴	1∴	6 (5)
Inc	Siby	∴	∴	3
Inc	Spco 2	.	∴	5
INV	CIRSI		.	1
Inc	Chfr 2	.	∴	4 (2)
Inc	Acla	.	⊠	10 (6)
Inc	Trdu		□	8 (2)
Inc	Meli		L∴	6 (5)
Inc	CRUIC		.	1
	Litter	⊠⊠⊠⊠⊠∴		
	Rock			
	Bare Ground	⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr	.	⊠.	∴		⊠∴			∴			
Chvi		∴			∴	.					
SYMPH		∴			∴						
Rhla	∴				∴						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-56 Vegetation Type Mixed Brush
Location: T 15 R 99W S 30 1/4 1/4 S SW/NE Date 7/26/75
Slope 7° Aspect 120° Elevation 7440'
Field Analyst(s) DCK Pace Interval 4
QA Check Rpm 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4
Current Trend ↑ U

Soil Stability

Current Erosion 22
Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Agtr		::	4
Dec	Orhy	::	⊠:.	17
Dec	Kocr		.	1
Dec	Pofe		.	1
Dec	Agsm	.	⊠ 1:	16
Dec	Trgy		.	1
Inc	Cage		.	1
Inc	Coum	.	⊠⊠	21 (5)
Inc	Peca	..	:.	5
Inc	Spco 2		□	8 (5)
Inc	Chdo		:	2
Inc	Crse		:.	3
Inc	Base		:	2
Inc	Hanu		::	4
Inc	Acdi		::	4
Inc	Erum	:	:.	5
Inc	Lile		:.	3
Inc	Phfl		.	1
Inc	Semu 2		:	1
	Litter	⊠⊠		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Amut	:	U			.	:		1:			
Artr	:	:.	:		:	1:					
Teca	.	::	:		:.	::					
SYMPH	,	:			:.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-57 Vegetation Type Sagebrush

Location: T 15 R 99W S 31 1/4 1/4 S SE/NE Date 7/26/75

Slope 5° Aspect 800 Elevation 7160'

Field Analyst(s) DCK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend → S

Soil Stability

Current Erosion 37

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	Brin		.	1
D-cc	Fear	.	1:	6
D-cc	Agspi		:.	3
D-cc	Orhy	.	-	2
Inc	Stco	-	.	2
D-cc	Koer		.	1
D-cc	Agsm	::	⊠⊠⊠	33 (20)
Inc	Pose	.	L.	7 (5)
Inc	Spco2		⊠:.	13 (5)
Inc	Chdo		1:	5
Inc	Crse	.	⊔	8 (5)
Inc	Meci		:.	3
D-cc	Cach 3		-	1
INC	Lare		.	1 (5)
Inc	Crac		:	2
D-cc	Hebo	.		1
Inc	Peca	.	.	2
Inc	Erum		:.	4
Inc	Anse		.	1
Inc	Asdi		.	1
Inc	Acla		..	2
Inc	Coum		.	1
	Litter		⊠⊠⊠⊠⊠L.	
	Rock			
	Bare Ground		⊠⊠⊠:.	

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Arte	.	☒	☐	.	.	⊠::		:.			.
SYMPH		1:			1:						
Chna		.			.						

File No. C.1.1.1

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-58 Vegetation Type Pinyon Juniper

Location: T 25 R 94W S 6 1/4 1/4 S NW/NE Date 7/26/75

Slope 7° Aspect 180° Elevation 7520'

Field Analyst(s) DCK Pace Interval 4

QA Check RBM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↑ U

Soil Stability

Current Erosion 33

Current Trend ↓ D

COMPOSITION

Classification	Species	Hits	Tally	Total
Inc	Stco		:.	3
Dec	Orhy	:.	⊠⊠⊠⊠∪	50 (20)
Dec	Agspi		.	1
Dec	Agtr		::	4
Dec	Feid		.	1
Dec	Agsm		.	1
Inc	Sihy	.	⊠.	12
Inc	Peca		.	1
Inc	Hapu		1:	5
Inc	Phfl		1:	5
Inc	Mare		:.	3
Inc	Crse		:.	3
Inc	Chfr2		⊠	9 (2)
Inc	Erlo		.	1
Inc	Stco3		.	1
	Litter	⊠⊠⊠:.		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠:.		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
AMALA	.	1:			.	1:					
Juos	:	:.	.		.	.		.			:.
Cemo		□				□					
Pied	:	..	.		.			.			:.

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-59 Vegetation Type Mixed Brush
Location: T 15 R 99W S 31 1/4 1/4 S NE/NE Date 7/26/75
Slope 6° Aspect 165° Elevation 7400'
Field Analyst(s) DCK Pace Interval 4
QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend ↑ U

Soil Stability

Current Erosion 12
Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Agtr	.	L.	7
Dec	Orhy	..	⊠.	13
Inc	Brin		.	1
Inc	Stco	.	.	2
Dec	Agsm	.		1
Inc	Sihy	.	:.	41
Inc	Cage		.	1
Inc	Lile	:	⊠L.	18 (5)
Inc	Peca	:	⊠1:	17 (5)
Inc	Asdi		:	2
Inc	Crse		:.	3
Inc	Chdo		.	1
Inc	Hano	.	□	9 (5)
Inc	Spco 2	.	::	5
Inc	Ipag	..	::	6 (5)
Inc	Phfl		1:	5
Inc	Hanu		:	2
Inc	CRUIC		:	2
Inc	Stco 3		:	1
	Litter	⊠⊠:		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠::		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		..				:					
Atco		..			:						
Amut	::	11	.		:.	11			.		
Chvi	..	.	.		:'				'		
SYMPH		1:			::	.					
Crmo		.			.						

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK-60 Vegetation Type Aspen

Location: T 25 R 100 W S 34 1/4 1/4 S SW/SW Date 7/27/75

Slope 30° Aspect 45° Elevation 8060'

Field Analyst(s) DCK Pace Interval 4

QA Check RAM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 7

Current Trend ↑ U

Soil Stability

Current Erosion 5

Current Trend ↑ U

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Bram	. . .	⊠	11 (10)
Inc	Stco	. .	::	6 (5)
Inc	STIPA	: .	⊠⊠ :	25
INC	SENEC		.	1
Inc	POA spp.		::	4
Inc	DELPH		1:	5
Inc	Aclo		::	4 (2)
Inc	FRAGA	.	:.	4 (2)
Inc	SMILA	.	1:	6 (2)
Dec	Agca	.	:	3
Inc	VIOLA	.	1:	6 (2)
INC ~~FNB~~(5) unk=2		.	⊠	10 (5)
Dec	HERAC	.	::	5
FNC	Pegr		: .	3
Inv	STELL		..	2
Inc	Chfr 2.		.	1
Inc	Heun		::	4
	Litter	⊠⊠⊠⊠⊠⊠⊠⊠		
	Rock			
	Bare Ground	U		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
SYMPH		⊠.			⊠.			.			
Rowo		:.			:.						
RIBES	:	:			:			:			
PRUVI	.	:						:.			
PiAr	:	:.			:			:.			

REBOOT PHOTOGRAPH POINT

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RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. DCK-61 Vegetation Type Mixed Brush

Location: T 2S R 100W S 3 1/4 1/4 S NW NE Date 7/27/75

Slope 40° Aspect 310° Elevation 8300'

Field Analyst(s) DCK Pace Interval 4

QA Check Rom 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ U

Soil Stability

Current Erosion 13

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
~~UNK~~ UNK 3				1 (5)
Inc	Herb			3
Inc	Crac			1
Inc	CALOC			1
Dec	Fear			1
Inc	STIPA			5
Dec	Bran			4
Dec	Agsp			5
Dec	Agtr			1
Inc	CAge			19 (15)
Inc	POA spp			7
Inc	Luca			9 (7)
Inc	Acla			3 (2)
Inc	HeUN			8 (5)
Inc	DELPH			2
Inc	Thmo			3
Inc	VIOLA			2
Inc	Mecl			1
Inc	Vaac			1
Inc	Erea			2
Inc	Coum			5
Inc	Poca			1
Dec	Cach 3			1
Inc	Erum			4
Dec	BROMU			10
	Litter			
	Rock			
	Bare Ground			

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
SYMPH											
Amut											
Artr											
Died											

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. DCK 02 Vegetation Type Bald

Location: T 25 R 100W S 2 1/4 1/4 S NW/NW Date 7/27/75

Slope 6° Aspect 265° Elevation 7060'

Field Analyst(s) DCK Pace Interval 4

QA Check RBM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend ↑ U

Soil Stability

Current Erosion 9

Current Trend → S

COMPOSITION

Classification	Species	Hits	Tally	Total
Dec	Agtr	L	⊠□	24 (20)
Dec	Kocr		L	6
Dec	Feat		::	4
Inc	Stco	.	L	7 (5)
Inc	Pose	.	:	3
Inc	Erum	.	:.	4
Inc	Assp 3	::	⊔	11 (5)
Dec	Hebo	.	.	2
Inc	Aspu		.	1
Inc	Peca	:.	⊠:	15 (5)
Inc	Hyac		⊠	9 (5)
Inc	Hanu	.	⊠	11 (5)
Inc	Spco2		.	1
Inc	Crse		.	1
Inc	OENOT		.	1

Litter	⊠:.
Rock	
Bare Ground	⊠⊠⊠⊠⊠⊠□

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
~	~	NA	~								

File No. C.1.1.1
Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. KCV-1 Vegetation Type Sagebrush
Location: T 2S R 99W S 14 1/4 1/4 S NW/NW Date 7/9/95
Slope 9° Aspect 160° Elevation 6600'
Field Analyst(s) KCV Pace Interval 2
QA Check RDM 9/16/95

CONDITION AND TREND RATING

Vegetation

Vigor 5
Current Trend ↑ (U)

Soil Stability

Current Erosion 30
Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Ardr 2	:	⊠ I:	17 (2)
INC	Chfr 2	.	⊠⊠ L.	27 (2)
INC	Crse	:	⊠	11 (5)
INC	Depi	:.	⊠ L.	20 (T)
DEC	Agsm		⊠ L.	16
DEC	Stci		:.	3 (10)
DEC	Eufe		:	2
DEC	Orhy		:	1
INC	Phfl		.	1
INC	Tafa	.		1
INC	Sini	.		1
	Litter	⊠⊠		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Chvi	.	.			.	.					
Artr	:	⊠⊠.			⊠⊠						

RBOSP [illegible]

ECI

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT.

Transect No. KCV-2 Vegetation Type Pinyon Juniper

Location: T 25 R 99W S 10 1/4 1/4 S NE/SE Date 7/9/75

Slope 7° Aspect 10° Elevation 7090'

Field Analyst(s) KCV Pace Interval 4

QA Check RBM 9/16/75 ✓

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ⇒ (S)

Soil Stability

Current Erosion 20

Current Trend ↓ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Tray		·	1
DEC	Pofe	·	·	2
INC	Deri	·	·	2 (2)
INC	Cage	··	⁞·	7
INC	Maie		·	1
INC	Chfr 2	·	⊔	8 (2)
DEC	Agsm	·	⊠	11
INC	Erum		·	1
INC	Crse		⊔·	6 (5)
INC	Sihy	⁞	⊠⁞	14
DEC	Orhy	⁞·	⊠	13
INC	Phfi		⁞·	3
INC	Hanu	·	⊠⁞⁞	15 (5)
INC	Peca		··	2
INC	Lepu		··	2
INC	Aspu		·	1
INC	Erlo		⁞⁞	4
INC	Phho		⁞	2
DEC	Agtr	·	⁞·	4
DEC	Stco		·	1
	Litter	⊠⊠		
	Rock			
	Bare Ground	⊠⊠⊠⊠⊠⊠⊔		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pier		·									·
Juos		⊔				·		·			⊔·
Crmo		⁞⁞			⁞⁞	·					
Chvi	⁞	⁞			⁞⁞						·
Putr		·			·						
Atco		·			·						
Artr		⊔			⊔						

ECI

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. KCV-3 Vegetation Type Pinyon Juniper

Location: T 25 R 99W S 15 1/4 1/4 S NW/SE Date 7/9/75

Slope 6° Aspect 150° Elevation 6800'

Field Analyst(s) KCV Pace Interval 4

QA Check RDM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑ (U)

Soil Stability

Current Erosion 12

Current Trend √ (D)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Chfr 2		⁘	1
INC	Ipag		⁘	3
INC	Opfr		⁘	1
DEC	Orby	⁘	⊠⁘	16
DEC	Trgr		⁘	2
INC	Phho	⁘	L⁘	7 (5)
DEC	Pofe	⁘	L⁘	9
INC	Siby	⁘	⊠⁘	16
DEC	Agth	⁘	⊠⊠⁘	16
INC	Crac		⁘	4 (2)
INC	Asdi		⁘	3
INC	Semu 2		⁘	2
DEC	Agsm		⁘	1
INC	Crse	⁘	⁘	6 (5)
INC	Cage	⁘	⁘	6
INC	Phfl		⁘	5 (5)
INC	Eripu 2		⁘	3

Litter	☐
Rock	
Bare Ground	⊠⊠⊠⊠⊠⊠⊠L

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pied	⁘							⁘			
Junc	⁘	⊠						⁘			⊠
Artr		⊠			⊠						

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. KCV 4 Vegetation Type Sagebrush

Location: T 25 R 99W S 16 1/4 1/4 S NE|SE Date 7/9/75

Slope 7° Aspect 330° Elevation 7200'

Field Analyst(s) KCV Pace Interval 4

QA Check ROM 9/16/75

CONDITION AND TREND RATING

Vegetation

Vigor 4

Current Trend → (3)

Soil Stability

Current Erosion 25

Current Trend ↓ (1)

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	Erum	.		1
INC	Cage		.	1
INC	Crse		.	1
DEC	Trgy	..	.	3
DEC	Pofe	⁘	⁚	5
DEC	Stco	⊡	.	9
INC	Semu 2	⊡	4	16 (5)
INC	Luca	⁚		5 (2)
DEC	Hebo	⁚		1
INC	Pose	⁘		3
DEC	Stco	⊠.	..	13
INC	Asdi	.		1
INC	Phfl	.	.	2
INC	Phho	L		6 (5)
INC	Sosa 2	.		1
INC	Coum	..	⁚	5 (5)
DEC	Orhy	..	L	8
DEC	Acam	..	⁚	5
INC	Kyte	..	..	4
INC	Ph lo	11		7 (5)
INC	PENS	.		1
INC	Aspu	.	-	2
	Litter	..		
	Rock			
	Bare Ground	⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Chvi		⁚			⁚	.					
Artr		⊠⊠⁚			⊠⊠⁚						

REDUCTION PROCESS REPORT ECI

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RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. KCV-5 Vegetation Type PINYON-JUNIPER

Location: T 25 R 99W S 16 1/4 1/4 S NE/NE Date 7/9/75

Slope 4° Aspect 80° Elevation 7200'

Field Analyst(s) KCV Pace Interval 4

QA Check RPM 10/21/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↑

Soil Stability

Current Erosion 15

Current Trend ↓

COMPOSITION

Classification	Species	Hits	Tally	Total
INC	CAREX	.	:	3
DEC	Pofe	:	.	3
INC	Semu 2	.	:	3
INC	Phho	::	::	6 (5)
INC	Phfl		.	1
INC	Aspu		:	2
INC	Basa	.		1
DEC	Orhy	□	4	15
INC	Ipag	::	::	6 (5)
DEC	Stco	4:	::	10
DEC	Agsm	1:	::	8
DEC	Tray	:		2
INC	Pose	:		2
DEC	Actr	:	:	4
INC	Sihy	.	:	3
INC	Spco 2	:	:	4
INC	Phlo	.	1:	6 (5)
INC	Crse	::	.	4
INC	Luca	.	.	2
INC	Chfr 2		.	1
INC	Crum	::		4
INV	Brte	1:	.	6
INC	Lilo	.		1
INC	Chdo	.	.	2
	~~Lotr~~	—		7
INC	Asdi		.	1
	Litter	1:		
	Rock			
	Bare Ground	⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Pied	:.	:.						:.			:.
Artr	:	□	:		⊠:						
Juos	:.	:						:.			.
Putr		:			.						

RECORDS MANAGEMENT REPORT

ECI

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. KCV-6 Vegetation Type Pinyon Juniper

Location: T 25 R 99W S 11 1/4 1/4 S SE/SW Date 7/11/75

Slope 7° Aspect 135° Elevation 7000'

Field Analyst(s) DCK Pace Interval 1

QA Check RBM 10/21/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↓

Soil Stability

Current Erosion 15

Current Trend ↓

COMPOSITION

Classification	Species	Hits	Tally	Total
- DEC	Orhy	LI	⊠ LI	24 (20)
INC	Phfl		.	1
INC	Pose		:	3
- INC	Sihy	L	⊠ :	18
- DEC	Agtr	LI	::	11
INC	Chfr 2		:	2
DEC	Stco		.	1
INC	Case	.	:	3
INC	Chdo		.	1
INC	Semo 2		.	1
- INC	Crse	:	⊠ :.	15 (5)
INC	Acte 3		::	4
INC	Asdi		:	2
INC	Phho		.	1
INC	Stco 3	.	.	2
INC	Ardi 3		.	1

Litter	⊠ ⊠
Rock	.
Bare Ground	⊠ ⊠ ⊠ ⊠ ⊠ :.

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Semo		::			::						
Artr		::			:.	.					
Juos		:.	::					.			LI
Pied	:	.	:.		:			.			:.
Chno		.	:		:.						.
Atco		:					.				

[illegible] DEPOT

ECI

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. KCV-7 Vegetation Type Sagebrush

Location: T 25 R 99W S 11 1/4 1/4 S SE/NW Date 7/11/75

Slope 5° Aspect 40° Elevation 7020'

Field Analyst(s) DCK Pace Interval 2

QA Check RWM 10/21/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↓

Soil Stability

Current Erosion 30

Current Trend ↓

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Arhy	⊠	1	16
INC	Spcb 2	1	⊠	14 (5)
INC	Ardi 3	:		2
INC	Sihy	:	:	3
DEC	Agtr	:	:	6
INC	Pose	:	⊔	10 (5)
INC	Crse	:	:	5
DEC	Hebo	:	:	4
INC	Phho	:	:	7 (5)
INC	Chdo	.		1
DEC	Tray		:	2
DEC	Stco	.		1
DEC	Agsm	□	⊠	15
INC	Aspu	:	.	5
INC	Erdu 2	:	.	3
INC	Sesp 2	.		1
INC	Phfl	.		1
INC	Lepu	.		1
	Litter	⊠		
	Rock	.		
	Bare Ground	⊠⊠⊠⊠		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Artr		⊠⊠:	:	1	⊠	:	.				
Chna		.			.	.					

[illegible] REPORT

ECI

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Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. KCV-8 Vegetation Type Pinyon-Juniper

Location: T 25 R 99W S 3 1/4 1/4 S SE/SE Date 7/11/75

Slope 7° Aspect 70° Elevation 7100'

Field Analyst(s) KCV Pace Interval 2

QA Check RBM 10/21/75

CONDITION AND TREND RATING

Vegetation

Vigor 5

Current Trend ↓

Soil Stability

Current Erosion 18

Current Trend →

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Agtr		⊠	15
DEC	Orhy		⊠⊠	26 (20)
DEC	Stcb			5
DEC	Trgy			1
DEC	Agsm			1
INC	Cacio			5
INC	Post		⊠	11 (5)
INC	Sihy			1
INC	Haju			1
INC	Phhp		⊠	10 (5)
INC	Phfl			3
INC	Area			2
INC	Hanu		4	7 (5)
INC	Crce		4	7 (5)
INC	Haac			2
INC	Erpu 2			1
INC	Ampu			1
DEC	Hebo			1

Litter	⊠ 4
Rock	⊠
Bare Ground	⊠ ⊠ ⊠ ⊠ ⊠ ⊠ 4

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Tuos			⊠								⊠
Cemo											
Arfr		4			4						
Pied											

PROCESS REPORT

ECI

File No. C.1.1.1

Sheet 1 of 1

RANGE AND BROWSE CONDITION-PACED TRANSECT

Transect No. KCV-9 Vegetation Type Pinyon-Juniper

Location: T 25 R 99W S 16 1/4 1/4 S SW/SW Date 7/11/75

Slope 12° Aspect 110° Elevation 7370'

Field Analyst(s) KCV Pace Interval 4

QA Check Ram 10/2/75

CONDITION AND TREND RATING

Vegetation

Vigor 6

Current Trend ↑

Soil Stability

Current Erosion 12

Current Trend ↓

COMPOSITION

Classification	Species	Hits	Tally	Total
DEC	Orhy	⁘	⊠⊠⁘	25 (20)
DEC	Sted	⁘	⊠⁙	20 (15)
DEC	Agtr	⁘	⁘⁘	4
INC	Caag	⁘	⁘	6
INC	Pose	⁘	⊠	14 (5)
DEC	Pote	·	·	2
INC	Phho		⁙	6 (5)
INC	Hamu		⁘	3
INC	Peca		⁘	2
INC	OENOT		·	1
INC	Asdi		⁘	2
INC	Asch		⁘	2
INC	Crac		⁘	2
INC	Spo2		·	1
INC	Iain		⁘	2
INC	ASTER		·	1
INC	Ipoa		⁘·	3
INC	Erol		⁘	1
INC	Ph#1		⁘	2
	Litter	⊠⁘		
	Rock	□		
	Bare Ground	⊠⊠⊠⊠⊠⊠⁘		

BROWSE CONDITION

Species	Age Class: Young	Mature	Decadent	Dead	Form Class: 1	2	3	4	5	6	Unavailable
Agtr	·	⁘	U		⊠						
Pipa	⁘	⁘			⁘			⁘			⁘
Thvi		·			·						
Tora		·			·						
Juos	·	⁘			·			⁘			

RBOSP Pilot

ECI

File No. C.1.2.1-1

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 100W S 2 1/4 1/4 S NW/NW Date 27 Aug 75

Field Analyst(s) K, K, & H Lab Analyst _____ QA Check 9/10/75 Date 8/27/75

General Site Description Mixed Brush, high dense Amad #1

Conditions Possibly Affecting Data slope

OCCULAR ESTIMATION

weight in grams.

20 m Plot		100 m Plot	
1	23 gm.	1a	31
2	27 gm	2a	24
3	25 gm.	3a	36
4	34 gm.	4a	25
5	80 gm	5a	19.
6	31 gm	6a	18
7	37 gm.	7a	17
8	30 gm.	8a	26
9	39 gm.	9a	29
10	27 gm.	10a	35
Cage 1	53 gm	Cage 2	51

Plot 1 field weight 22 gm. Plot 1a field weight 32

Plot 1 dry weight 14. Plot 1a dry weight 19

P 2

Cage 1 field weight 63 gm. Cage 2 field weight 62

Cage 1 dry weight 42 Cage 2 dry weight 34.

File No. C.1.2.1-2

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 100W S 2 1/4 1/4 SNE/NW Date 8/27/75

Field Analyst(s) K K & H Lab Analyst _____ QA Check 9/10/75 RAM Date _____

General Site Description grass bald - wind swept #2

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	5	1a	5
2	6	2a	12
3	4	3a	3
4	4	4a	3
5	6	5a	11
6	7	6a	5
7	5	7a	6
8	6	8a	12
9	7	9a	8
10	3	10a	6
Cage 1	8	Cage 2	19

Plot 1 field weight 5

Plot 1 dry weight 4

Plot 1a field weight 5

Plot 1a dry weight 4

Cage 1 field weight 10

Cage 1 dry weight 9

Cage 2 field weight 27

Cage 2 dry weight 19

FORAGE PRODUCTION AND UTILIZATION

File No. C·1·2.1-3

Project 83 Location: T 15 R 99W S 32 1/4 1/4 SSE/SW Date 8/27/75

Field Analyst(s) K.K.H Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description North facing slope mature stand of mixed brush #B

Conditions Possibly Affecting Data ____

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	10	1a	9
2	11	2a	2
3	8	3a	15
4	12	4a	26
5	36	5a	19
6	5	6a	4
7	1	7a	11
8	19	8a	26
9	15	9a	43
10	23	10a	11
Cage 1	20	Cage 2	60

Plot 1 field weight 13

Plot 1 dry weight 9

Plot 1a field weight 10

Plot 1a dry weight 7

Cage 1 field weight 17

Cage 1 dry weight 11

Cage 2 field weight 71

Cage 2 dry weight 46

7/75

File No. C.1.2.1-4

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 1S R 98W S 19 1/4 1/4 S SW/SW Date 8/28/75

Field Analyst(s) K.K.,++ Lab Analyst _____ QA Check RBM Date 9/10/75

General Site Description flat mesa top; sagebrush, extensive mature stand +/- ?, Douglas sage

Conditions Possibly Affecting Data _____

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	6	1a	
2	4	2a	
3	9	3a	
4	11	4a	
5	12	5a	N/A
6	13	6a	
7	6	7a	
8	26	8a	
9	16	9a	
10	32	10a	
Cage 1	17	Cage 2	

nonpermant
∴ 1 cone

Plot 1 field weight 6

Plot 1 dry weight 4

Cage 1 field weight 17

Cage 1 dry weight 12.

Plot 1a field weight _____

Plot 1a dry weight _____

N/A

Cage 2 field weight _____

Cage 2 dry weight _____

[illegible] PLOT

File No. C·1·2·1-5

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 1S R 99W S 24 1/4 1/4 S SE/NE Date 8/28/75

Field Analyst(s) K, K, H Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description mature stand sagebrush, mesa top. # 5-

Conditions Possibly Affecting Data ——

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	16	1a	26
2	17	2a	15
3	5	3a	11
4	23	4a	7
5	1	5a	10
6	8	6a	15
7	11	7a	11
8	26	8a	3
9	12	9a	16
10	9	10a	15
Cage 1	16	Cage 2	11

Plot 1 field weight 20 Plot 1a field weight 21

Plot 1 dry weight 13. Plot 1a dry weight 16.

Cage 1 field weight 19 Cage 2 field weight 13

Cage 1 dry weight 15. Cage 2 dry weight 9.

File No. C·1·2·1-6

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 15 R 99W S 24 1/4 1/4 SW/NW Date 8-28-1975

Field Analyst(s) K, K, H Lab Analyst _____ QA Check NBM Date 9/10/75

General Site Description Number 6 - Pinyon - Juniper · mature · Sage understory #6

Conditions Possibly Affecting Data Wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	19	1a	36
2	10	2a	35
3	25	3a	25
4	26	4a	41
5	6	5a	28
6	5	6a	2
7	15	7a	7
8	12	8a	5
9	23	9a	1
10	18	10a	47
Cage 1	22	Cage 2	51

Plot 1 field weight 24

Plot 1 dry weight 15

Plot 1a field weight 49

Plot 1a dry weight 36

Cage 1 field weight 24

Cage 1 dry weight 17

Cage 2 field weight 54

Cage 2 dry weight 38

7/75

File No. C·1·2·1–7

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 1S R 99W S 24 1/4 1/4 S NW/NW Date 8/28/75

Field Analyst(s) K K H Lab Analyst _____ QA Check RBM Date 9/10/75

General Site Description ~71 mature P-J stand w/ sage understory

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	50	1a	
2	12	2a	
3	1	3a	
4	0	4a	
5	7	5a	
6	43	6a	n/A
7	26	7a	
8	11	8a	
9	0	9a	
10	7	10a	
Cage 1	46	Cage 2	

Plot 1 field weight 51

Plot 1 dry weight 35

Cage 1 field weight 38

Cage 1 dry weight 27

Plot 1a field weight _____

Plot 1a dry weight _____

Cage 2 field weight n/A

Cage 2 dry weight _____

RECEIVED PROCESS REPORT

File No. C·1·2·1 – 8

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 15 R 99w S 11 1/4 1/4 SSW/SW Date 8/28/75

Field Analyst(s) K.K., H Lab Analyst _____ QA Check pm Date 9/10/75

General Site Description Mature P–J stand, Artr and Chna understory tbrec trap by #8 Duck Creek

Conditions Possibly Affecting Data wind #8

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	12	1a	
2	13	2a	
3	10	3a	
4	10	4a	
5	15	5a	
6	7	6a	N/A
7	30	7a	
8	24	8a	
9	25	9a	
10	3	10a	
Cage 1	28	Cage 2	

Plot 1 field weight 16

Plot 1 dry weight 10.

Cage 1 field weight 25

Cage 1 dry weight 17.

Plot 1a field weight _____

Plot 1a dry weight _____

N/A

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C·1·2·1 – 9

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 1S R 99W S 21 1/4 1/4 S NE SW Date 8/28/75

Field Analyst(s) K, K, H Lab Analyst _____ QA Check LDM Date 9/10/75

General Site Description 9-P, mature P-J, primarily Juos

Conditions Possibly Affecting Data ———

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	14	1a	
2	28	2a	
3	16	3a	
4	14	4a	
5	21	5a	
6	7	6a	N/A
7	25	7a	
8	26	8a	
9	34	9a	
10	31	10a	
Cage 1	36	Cage 2	

Plot 1 field weight 12

Plot 1 dry weight 8 –

Cage 1 field weight 33

Cage 1 dry weight 22 –

Plot 1a field weight _____

Plot 1a dry weight _____

Cage 2 field weight _____

Cage 2 dry weight _____

N/A

File No. C·1·2·1-10

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 1S R 99W S 21 1/4 1/4 S SW/SE Date 8/28/75

Field Analyst(s) KKH Lab Analyst _____ QA Check RAM Date 9/10/75

General Site Description #10, mature P.T w/ grass understory west side of road

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	5	1a	
2	12	2a	
3	15	3a	
4	13	4a	
5	11	5a	
6	11	6a	N/A
7	7	7a	
8	7	8a	
9	28	9a	
10	11	10a	
Cage 1	21	Cage 2	

Plot 1 field weight 3

Plot 1 dry weight 2

Cage 1 field weight 16

Cage 1 dry weight 9

Plot 1a field weight _____

Plot 1a dry weight _____

N/A

Cage 2 field weight _____

Cage 2 dry weight _____

PHOTO REPRODUCIBLE FROM ORIGINAL

File No. C·1·2·1-11

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 15 R 100W S 36 1/4 1/4 SE/NW Date Aug 28, 1975

Field Analyst(s) K, K, H Lab Analyst _____ QA Check RAM Date 9/10/75

General Site Description Sagebrush mesa top - flat topography #11

Conditions Possibly Affecting Data _____

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	8	1a	
2	8	2a	
3	14	3a	
4	6	4a	
5	16	5a	
6	13	6a	N/A
7	9	7a	
8	7	8a	
9	10	9a	
10	7	10a	
Cage 1	6	Cage 2	

Plot 1 field weight 5

Plot 1 dry weight 4

Cage 1 field weight 4

Cage 1 dry weight 4

Plot 1a field weight _____

Plot 1a dry weight _____

N/A

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C·1·2·1-12

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 2S R 99W S 14 1/4 1/4 S NE SW Date 8/29/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RDM Date 9/17/75

General Site Description Mature P-5 stand w/ AMUT and Artr understory #12

Conditions Possibly Affecting Data ——

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	10	1a	2
2	9	2a	1
3	14	3a	6
4	6	4a	1
5	2	5a	8
6	5	6a	16
7	0	7a	5
8	6	8a	1
9	3	9a	1
10	6	10a	7
Cage 1	2	Cage 2	5

Plot 1 field weight 9

Plot 1 dry weight 6

Plot 1a field weight 2

Plot 1a dry weight 1

Cage 1 field weight 1

Cage 1 dry weight 1

Cage 2 field weight 3

Cage 2 dry weight 2.

File No. C·1·2·1 -13

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 99W S 14 1/4 1/4 SSW/NW Date 8/29/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RM Date 9/10/75

General Site Description #13 Mature Artr stand

Conditions Possibly Affecting Data ——

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	1	1a	1
2	0	2a	0
3	0	3a	0
4	1	4a	1
5	2	5a	0
6	0	6a	2
7	0	7a	1
8	2	8a	0
9	0	9a	1
10	0	10a	3
Cage 1	0	Cage 2	0

Plot 1 field weight 1

Plot 1 dry weight 0

Plot 1a field weight 1

Plot 1a dry weight 1

Cage 1 field weight 0

Cage 1 dry weight 0

Cage 2 field weight 0

Cage 2 dry weight 0

File No. C·1·2·1-14

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 99W S 12 1/4 1/4 S NW/NE Date 8/29/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RBM Date 9/10/75

General Site Description #14 Mature P-J stand - primarily Juos - open stand

Conditions Possibly Affecting Data —

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	1	1a	<1
2	1	2a	0
3	0	3a	<1
4	1	4a	0
5	1	5a	<1
6	0	6a	0
7	0	7a	0
8	0	8a	<1
9	1	9a	0
10	2	10a	1
Cage 1	1	Cage 2	0

Plot 1 field weight 1

Plot 1 dry weight 1

Plot 1a field weight <1

Plot 1a dry weight 0

Cage 1 field weight <1

Cage 1 dry weight 0

Cage 2 field weight 0

Cage 2 dry weight 0

File No. C·1·2·1-15

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 15 R 98W S 33 1/4 1/4 SE/SW Date 8/29/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RAM Date 9/10/75

General Site Description #15 mixture Artr stand

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION
weight in grams

20 m Plot		100 m Plot	
1	55	1a	
2	16	2a	
3	25	3a	
4	25	4a	
5	15	5a	
6	13	6a	N/A
7	17	7a	
8	6	8a	
9	14	9a	
10	2	10a	
Cage 1	1	Cage 2	

Plot 1 field weight 51

Plot 1 dry weight 40

Cage 1 field weight <1

Cage 1 dry weight 1

Plot 1a field weight _____

Plot 1a dry weight _____

N/A

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C.1.2.1 - 16

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 98W S 8 1/4 1/4 S NE/SW Date 8/29/75

Field Analyst(s) DCK, JS 14 Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description #16 mature P-J w/ Putr understory

Conditions Possibly Affecting Data _____

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	12	1a	
2	9	2a	
3	24	3a	
4	6	4a	
5	7	5a	N/A
6	5	6a	
7	4	7a	
8	5	8a	
9	16	9a	
10	2	10a	
Cage 1	22	Cage 2	

Plot 1 field weight 8

Plot 1 dry weight 6

Cage 1 field weight 16

Cage 1 dry weight 10

Plot 1a field weight _____

Plot 1a dry weight N/A

Cage 2 field weight _____

Cage 2 dry weight _____

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File No. C·1·2·1-17

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 99W S 27 1/4 1/4 S NE/SW Date 8/29/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check KOM Date 9/10/75

General Site Description #17 Mature Arte

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot	
1	36
2	38
3	30
4	39
5	33
6	28
7	29
8	16
9	12
10	26
Cage 1	7

100 m Plot	
1a	
2a	
3a	
4a	
5a	
6a	N/A
7a	
8a	
9a	
10a	
Cage 2	

Plot 1 field weight 40

Plot 1 dry weight 30

Cage 1 field weight 6

Cage 1 dry weight 5

Plot 1a field weight _____

Plot 1a dry weight N/A

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C·1·2·1-18

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 99W S 23 1/4 1/4 S SW/NE Date 8/29/75

Field Analyst(s) DCK JSH Lab Analyst _____ QA Check RBM Date 9/10/75

General Site Description #18 mature PJ

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	10	1a	
2	3	2a	
3	9	3a	
4	11	4a	
5	2	5a	
6	7	6a	
7	1	7a	N/A
8	1	8a	
9	<1	9a	
10	9	10a	
Cage 1	13	Cage 2	

Plot 1 field weight 8

Plot 1 dry weight 5.

Cage 1 field weight 15

Cage 1 dry weight 11

Plot 1a field weight _____

Plot 1a dry weight N/A

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C·1·2·1-19

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 99W S 8 1/4 1/4 SE/SE Date 8/29/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description #19 mature Artr stand

Conditions Possibly Affecting Data wind.

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	22	1a	25
2	27	2a	17
3	15	3a	32
4	19	4a	5
5	18	5a	12
6	23	6a	18
7	26	7a	16
8	31	8a	18
9	31	9a	16
10	20	10a	36
Cage 1	30	Cage 2	37

Plot 1 field weight 16

Plot 1 dry weight 13

Plot 1a field weight 17

Plot 1a dry weight 13

Cage 1 field weight 36

Cage 1 dry weight 27

Cage 2 field weight 36 !

Cage 2 dry weight 25

File No. C·1·2·1-20

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 2S R 99W S 9 1/4 1/4 SSW|SW Date 8/29/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description 20 - Mature P-J stand

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	5	1a	22
2	6	2a	4
3	13	3a	9
4	1	4a	1
5	2	5a	8
6	24	6a	6
7	8	7a	1
8	7	8a	3
9	8	9a	<1
10	6	10a	4
Cage 1	5	Cage 2	3

Plot 1 field weight 5

Plot 1 dry weight 2

Plot 1a field weight 15

Plot 1a dry weight 10

Cage 1 field weight 5

Cage 1 dry weight 2

Cage 2 field weight 3

Cage 2 dry weight 2

File No. C·1·2·1-21

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 2S R 99W S 6 1/4 1/4 S SW/NE Date 9/31/75

Field Analyst(s) DLK JSH Lab Analyst _____ QA Check RMM Date 9/10/75

General Site Description #21 - Mature Artr w/ SYMP & cheat grass understory

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot	
1	16
2	11
3	12
4	30
5	6
6	12
7	10
8	12
9	8
10	9
Cage 1	9

100 m Plot	
1a	
2a	
3a	
4a	
5a	
6a	N/A
7a	
8a	
9a	
10a	
Cage 2	

Plot 1 field weight 16

Plot 1 dry weight 13

Cage 1 field weight 10

Cage 1 dry weight 8.

Plot 1a field weight _____

Plot 1a dry weight N/A

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C·1·2·1-22

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 2S R 99W S 8 1/4 1/4 SW NW Date 8/31/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RBM Date 9/10/75

General Site Description windblown bald w/ ANAL & PJ interspersed #22

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	4	1a	20
2	8	2a	8
3	8	3a	6
4	10	4a	11
5	11	5a	7
6	8	6a	5
7	11	7a	8
8	16	8a	12
9	16	9a	6
10	6	10a	6
Cage 1	18	Cage 2	10

Plot 1 field weight 6

Plot 1 dry weight 5

Plot 1a field weight 13

Plot 1a dry weight 9

Cage 1 field weight 19

Cage 1 dry weight 14

Cage 2 field weight 10

Cage 2 dry weight 6.

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CLOSE REPORT

FORAGE PRODUCTION AND UTILIZATION

File No. C·1·2·1-23

Project 23 Location: T 1S R 99W S 33 1/4 1/4 SSE/SE Date 8/31/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description #23 mature PJ stand w/ Artr understory

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot	
1	5
2	12
3	13
4	8
5	2
6	12
7	2
8	11
9	2
10	10
Cage 1	5

100 m Plot	
1a	3
2a	1
3a	6
4a	15
5a	2
6a	16
7a	2
8a	6
9a	5
10a	2
Cage 2	<1

Plot 1 field weight 4

Plot 1 dry weight 2,

Plot 1a field weight 4

Plot 1a dry weight 3,

Cage 1 field weight 4

Cage 1 dry weight 4

Cage 2 field weight <1

Cage 2 dry weight 0

RIDGOP

* small mammal 0011 (E. goad?).
dead in C-3 Hunting Club P-J

File No. C·1·2·1-24

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 1S R 98W S 30 1/4 1/4 S NE/SW Date 8/31/75

Field Analyst(s) DCK TSH Lab Analyst _____ QA Check RM Date 9/10/75

General Site Description 24 Elymus cinereus-~~Sagebrush~~ Artemisia/Chrysothamnus bottomlands

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	400	1a	219
2	107	2a	245
3	45	3a	201
4	650	4a	269
5	420	5a	249
6	417	6a	270
7	65	7a	330
8	225	8a	60
9	332	9a	190
10	148	10a	190
Cage 1	170	Cage 2	165

Plot 1 field weight 380

Plot 1 dry weight 212.

Plot 1a field weight 229

Plot 1a dry weight 120

Cage 1 field weight 314

Cage 1 dry weight 164.

Cage 2 field weight 167

Cage 2 dry weight 85.

File No. C·1·2·1-25

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T ~~1S~~ R 98W S 30 1/4 1/4 S NE/SW Date 8/31/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RBM Date 9/10/75

General Site Description 25, major Artr and Save

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION
weight in grams

20 m Plot		100 m Plot	
1	22	1a	300
2	2	2a	85
3	0	3a	102
4	1	4a	40
5	35	5a	161
6	11	6a	125
7	18	7a	127
8	6	8a	180
9	7	9a	320
10	4	10a	248
Cage 1	2	Cage 2	150

Plot 1 field weight 33

Plot 1 dry weight 24

Plot 1a field weight 313

Plot 1a dry weight 176

Cage 1 field weight 3

Cage 1 dry weight 4

Cage 2 field weight 141

Cage 2 dry weight 87.1

653

File No. C·1·2·1-26

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 2S R 99W S 19 1/4 1/4 S SW/SW Date 9/1/75

Field Analyst(s) DCK, JSH, 26 Lab Analyst _____ QA Check pbm Date 9/10/75

General Site Description mature Artr stand with sporadic sprinkling of AMAL

Conditions Possibly Affecting Data wind - temp.

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	20	1a	32
2	30	2a	13
3	25	3a	23
4	25	4a	26
5	20	5a	11
6	11	6a	40
7	20	7a	28
8	35	8a	17
9	35	9a	26
10	21	10a	20
Cage 1	6	Cage 2	14

Plot 1 field weight 26

Plot 1 dry weight 16

Plot 1a field weight 34

Plot 1a dry weight 20

Cage 1 field weight 8

Cage 1 dry weight 5.

Cage 2 field weight 13

Cage 2 dry weight 7.

File No. C·1·2·1-27

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 100W S 24 1/4 1/4 SE/SE Date 9/1/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description Mixed brush steep slope w/ Amut, Quga, SYMP, Artr - mature 27

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION
weight in grams

20 m Plot		100 m Plot	
1	35	1a	12
2	15	2a	31
3	23	3a	9
4	20	4a	17
5	20	5a	19
6	13	6a	5
7	19	7a	23
8	2	8a	9
9	15	9a	18
10	28	10a	21
Cage 1	31	Cage 2	22

Plot 1 field weight 30

Plot 1 dry weight 20

Plot 1a field weight 15

Plot 1a dry weight 11

Cage 1 field weight 36

Cage 1 dry weight 23

Cage 2 field weight 29

Cage 2 dry weight 17

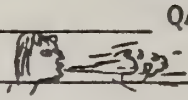
65F

File No. C·1·2·1-28

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R ~~100~~W S 27 1/4 1/4 S ~~NE~~/SE Date 9/1/75

Field Analyst(s) DCK, ~~JHS~~ Lab Analyst _____ QA Check RBM Date 9/10/75

General Site Description 28 - windswept bald 

Conditions Possibly Affecting Data WIND ↗

OCCULAR ESTIMATION
weight in grams

20 m Plot		100 m Plot	
1	6	1a	34
2	25	2a	4
3	16	3a	5
4	31	4a	11
5	38	5a	20
6	33	6a	35
7	13	7a	16
8	10	8a	37
9	4	9a	35
10	8	10a	47
Cage 1	34	Cage 2	~~38~~ 37

Plot 1 field weight 10

Plot 1 dry weight 7

Plot 1a field weight 45

Plot 1a dry weight 33

Cage 1 field weight 36

Cage 1 dry weight 21.1

Cage 2 field weight 36

Cage 2 dry weight 25

File No. C·1·2·1-29

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 100W S 16 1/4 1/4 S NE/NE Date 9/1/75

Field Analyst(s) DCK, TSH Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description #29 mature Arte w/ SYMP & Amut understory

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	7870	1a	84
2	74	2a	160
3	29	3a	67
4	38	4a	56
5	57	5a	75
6	45	6a	55
7	19	7a	36
8	85	8a	58
9	93	9a	94
10	54	10a	50
Cage 1	160	Cage 2	94

Plot 1 field weight 81

Plot 1 dry weight 49.

Plot 1a field weight 74

Plot 1a dry weight 42.

Cage 1 field weight 163

Cage 1 dry weight 79.

Cage 2 field weight 112

Cage 2 dry weight 70

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65?

FORAGE PRODUCTION AND UTILIZATION

File No. C·1·2·1-30

Project 83 Location: T 25 R 100W S ~~13~~ 14 1/4 1/4 SE/NW ~~SW/SW~~ Date 9/1/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description windswept bald #30

Conditions Possibly Affecting Data wind

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	4	1a	9
2	5	2a	12
3	6	3a	9
4	5	4a	3
5	5	5a	9
6	8	6a	5
7	7	7a	5
8	7	8a	6
9	9	9a	5
10	5	10a	6
Cage 1	14	Cage 2	15

Plot 1 field weight 4

Plot 1 dry weight 3

Plot 1a field weight 6

Plot 1a dry weight 4

Cage 1 field weight 16

Cage 1 dry weight 11.

Cage 2 field weight 16

Cage 2 dry weight 11

File No. C·1·2·1-31

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 99W S 2 1/4 1/4 S SE/NW Date 9/2/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RMM Date 9/10/75

General Site Description #31 mature P-J with Artr & Chna understory

Conditions Possibly Affecting Data _____

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	14	1a	
2	2	2a	
3	14	3a	
4	1	4a	
5	20	5a	N/A
6	8	6a	
7	9	7a	
8	7	8a	
9	2	9a	
10	4	10a	
Cage 1	5	Cage 2	

Plot 1 field weight 12

Plot 1 dry weight 8

Cage 1 field weight 4

Cage 1 dry weight 2

Plot 1a field weight _____

Plot 1a dry weight _____ N/A

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C·1·2·1-32

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 1S R 99W S 34 1/4 1/4 S SE/SE Date 9/2/75

Field Analyst(s) DCK, JSH Lab Analyst _____ QA Check RM Date 9/10/75

General Site Description 32 - Mature Artr stand in gulch bottom

Conditions Possibly Affecting Data ——

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	4	1a	11
2	<1	2a	1
3	4	3a	<1
4	3	4a	19
5	13	5a	4
6	<1	6a	5
7	3	7a	10
8	12	8a	6
9	17	9a	7
10	11	10a	6
Cage 1	7	Cage 2	5

Plot 1 field weight 4

Plot 1 dry weight 2

Plot 1a field weight 14

Plot 1a dry weight 11

Cage 1 field weight 3

Cage 1 dry weight 6 –

Cage 2 field weight 4

Cage 2 dry weight 2

File No. C·1·2·1 - 33

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 99W S 17 1/4 1/4 S NW/NW Date Sept. 4, 1975

Field Analyst(s) JSH Lab Analyst _____ QA Check mm Date 9/10/75

General Site Description Mixed Brush – East aspect – Amelanchier – Artem. sp. #33 MD

Conditions Possibly Affecting Data —

OCCULAR ESTIMATION

Weight in grams

20 m Plot		100 m Plot	
1	21	1a	39
2	22	2a	28
3	17	3a	41
4	23	4a	50
5	18	5a	31
6	16	6a	38
7	12	7a	20
8	30	8a	16
9	15	9a	15
10	37	10a	27
Cage 1	32	Cage 2	44

Plot 1 field weight 25g

Plot 1 dry weight 17

Plot 1a field weight 51

Plot 1a dry weight 37

Cage 1 field weight 26g

Cage 1 dry weight 26

Cage 2 field weight 48

Cage 2 dry weight 33

File No. C·1·2·1-34

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 15 R 99W S 33 1/4 1/4 S SE/NE Date 9-3-75

Field Analyst(s) JSH Lab Analyst _____ QA Check RMM Date 9/10/75

General Site Description #34 Pinyon-Juniper s.w.t aspect

Conditions Possibly Affecting Data _____

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	7	1a	22
2	6	2a	18
3	9	3a	34
4	7	4a	6
5	10	5a	23
6	4	6a	38
7	15	7a	16
8	14	8a	13
9	25	9a	8
10	11	10a	30
Cage 1	19	Cage 2	18

Plot 1 field weight 5

Plot 1 dry weight 4.

Plot 1a field weight 22

Plot 1a dry weight 17

Cage 1 field weight 20

Cage 1 dry weight 14

Cage 2 field weight 18

Cage 2 dry weight 13

File No. C.1.2.1-35

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 100W S 10 1/4 1/4 S SW/SW Date Sept 4, 1975

Field Analyst(s) JSH Lab Analyst _____ QA Check RM Date 7/10/75

General Site Description #35 Mixed Brush - south aspect

Conditions Possibly Affecting Data —

OCCULAR ESTIMATION

Weight in grams

20 m Plot		100 m Plot	
1	13	1a	
2	8	2a	
3	2	3a	
4	7	4a	
5	21	5a	
6	23	6a	
7	24	7a	
8	32	8a	
9	35	9a	
10	21	10a	
Cage 1	39	Cage 2	

N.A.

Plot 1 field weight 19

Plot 1 dry weight 12.

Plot 1a field weight _____

Plot 1a dry weight _____

Cage 1 field weight 47

Cage 1 dry weight 30

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C·1·2·1-36

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 100W S 4 1/4 1/4 SSE/SE Date Sept 4, 1975

Field Analyst(s) JSH Lab Analyst _____ QA Check RM Date 9/10/75

General Site Description Mixed Brush - SE aspect (Amut + Quga) #36

Conditions Possibly Affecting Data _____

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	17	1a	
2	43	2a	
3	15	3a	
4	39	4a	
5	31	5a	
6	54	6a	N. A.
7	27	7a	
8	4	8a	
9	2	9a	
10	21	10a	
Cage 1	25	Cage 2	

Plot 1 field weight 14

Plot 1 dry weight 11

Cage 1 field weight 20

Cage 1 dry weight 15

Plot 1a field weight _____

Plot 1a dry weight _____

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C·1·2·1 - 37

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 100W S 4 1/4 1/4 SNE/SE Date Sept. 4, 1975

Field Analyst(s) JSH Lab Analyst _____ QA Check rom Date 9/10/75

General Site Description #37 Pass Bald.

Conditions Possibly Affecting Data —

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	17	1a	15
2	18	2a	24
3	24	3a	27
4	29	4a	19
5	26	5a	36
6	14	6a	11
7	23	7a	16
8	25	8a	25
9	30	9a	28
10	11	10a	15
Cage 1	37	Cage 2	35

Plot 1 field weight 19

Plot 1 dry weight 16

Plot 1a field weight 14

Plot 1a dry weight 10

Cage 1 field weight 39

Cage 1 dry weight 30

Cage 2 field weight 35

Cage 2 dry weight 27

File No. C·1·2·1-38

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 100W S 1 1/4 1/4 S NW/NE Date Sept. 5, 1975

Field Analyst(s) JSH Lab Analyst _____ QA Check RDM Date 9/10/75

General Site Description Mixed Brush #38 southwest aspect

Conditions Possibly Affecting Data —

OCCULAR ESTIMATION

Weight in grams

20 m Plot		100 m Plot	
1	45	1a	26
2	5	2a	10
3	6	3a	12
4	5	4a	17
5	7	5a	14
6	29	6a	19
7	16	7a	6
8	20	8a	7
9	9	9a	17
10	10	10a	27
Cage 1	25	Cage 2	13

Plot 1 field weight 152

Plot 1 dry weight 37.

Plot 1a field weight 31

Plot 1a dry weight 21

Cage 1 field weight 20

Cage 1 dry weight 13

Cage 2 field weight 15

Cage 2 dry weight 10

File No. C·1·2·1- 39

9/5/75

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 1S R 100W S 36 1/4 1/4 SSE/SE Date Sept. 5, 1975

Field Analyst(s) JSH Lab Analyst _____ QA Check RM Date 9/10/75

General Site Description # 39 sagebrush

Conditions Possibly Affecting Data _____

OCCULAR ESTIMATION

weight in grams

Plot	20 m	Plot	100 m
1	19	1a	
2	20	2a	
3	6	3a	
4	2	4a	
5	6	5a	
6	18	6a	N/A
7	16	7a	
8	7	8a	
9	22	9a	
10	6	10a	
Cage 1	9	Cage 2	

Plot 1 field weight 16

Plot 1 dry weight 12

Plot 1a field weight _____

Plot 1a dry weight _____

Cage 1 field weight 6

Cage 1 dry weight 5

Cage 2 field weight _____

Cage 2 dry weight _____

File No. C·1·2·1-40

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 15 R 99W S 21 1/4 1/4 S NE/SE Date Sept 5, 1975

Field Analyst(s) JSH Lab Analyst _____ QA Check eom Date 9/10/75

General Site Description Pinyon-Juniper #40

Conditions Possibly Affecting Data —

OCCULAR ESTIMATION

weight in grams

20 m Plot		100 m Plot	
1	6	1a	5
2	1	2a	0
3	2	3a	2
4	13	4a	1
5	12	5a	6
6	2	6a	7
7	11	7a	10
8	9	8a	17
9	16	9a	20
10	4	10a	17
Cage 1	2	Cage 2	5

Plot 1 field weight 6

Plot 1 dry weight 4

Plot 1a field weight 7

Plot 1a dry weight 5

Cage 1 field weight 2

Cage 1 dry weight 1

Cage 2 field weight 4

Cage 2 dry weight 3

File No. C·1·2·1-41

FORAGE PRODUCTION AND UTILIZATION

Project 83 Location: T 25 R 99W S 6 1/4 1/4 SENE Date 9-16-75

Field Analyst(s) Kim Vories Lab Analyst _____ QA Check Rom 9/29/75 Date ~~9-16-75~~

General Site Description Mixed shrub/brush #41

Conditions Possibly Affecting Data —

OCCULAR ESTIMATION

weights in grams

20 m Plot		100 m Plot	
1	9g ★	1a	
2	8g	2a	
3	22g	3a	
4	52g	4a	
5	11g	5a	
6	21g	6a	
7	12g	7a	
8	3g	8a	
9	10g	9a	
10	2g	10a	
Cage 1	20g	Cage 2	

all weights not estimates

Plot 1 field weight 9 grams

Plot 1 dry weight 6

Cage 1 field weight 20 grams

Cage 1 dry weight 12.

Plot 1a field weight _____

Plot 1a dry weight _____

Cage 2 field weight _____

Cage 2 dry weight _____

7/75

ECI

2.3.15 Browse Condition and Utilization

2.3.15 BROWSE CONDITION AND UTILIZATION

No data were collected for this program during the reporting quarter.

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